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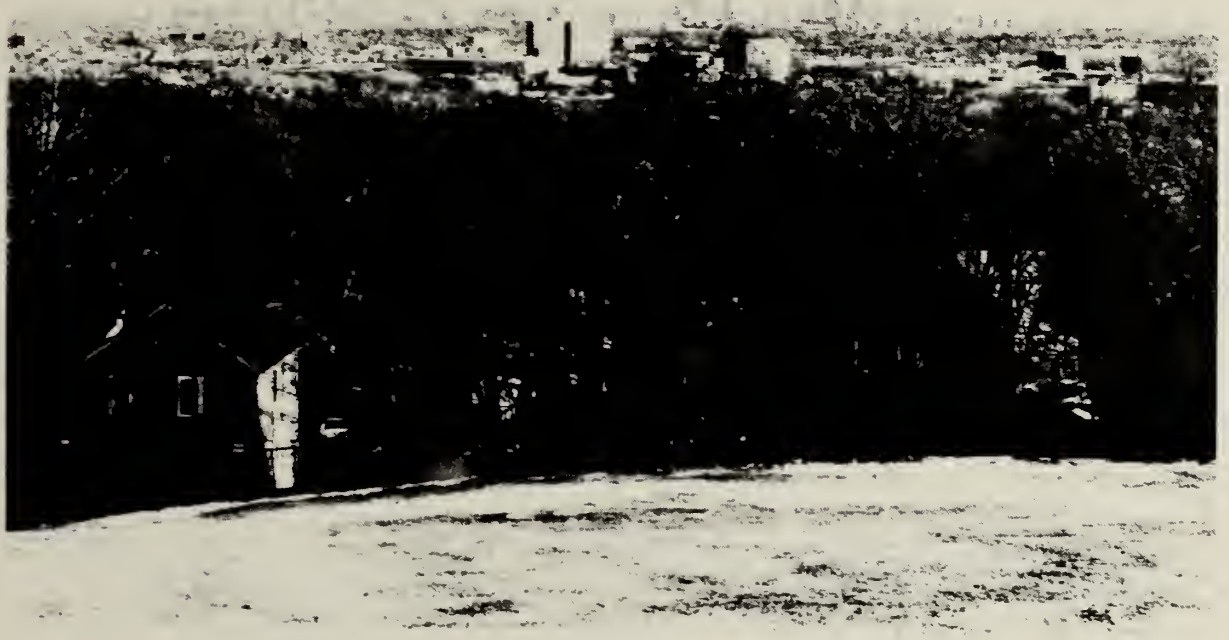

Regional and Community Population and Employment Outlook

894/460

MetroPlan 2000
A REGIONAL PLAN FOR THE BOSTON METROPOLITAN AREA

Metropolitan Area Planning Council
60 Temple Place
MAPC Boston, MA 02111

ABOUT THIS REPORT

The Metropolitan Area Planning Council is the officially designated regional planning agency for 101 cities and towns in Boston metropolitan region. The council helps its member communities plan in the areas of economic development, housing, demographics, transportation, water, solid waste and open space.

The development of community population and employment forecasts for the MAPC region were partly funded with contracts from the Massachusetts Department of Public Works, the federal Highway Administration, and the federal Urban Mass Transportation Administration. The responsibility for the information and opinions contained in this report rests solely with the Metropolitan Area Planning Council.

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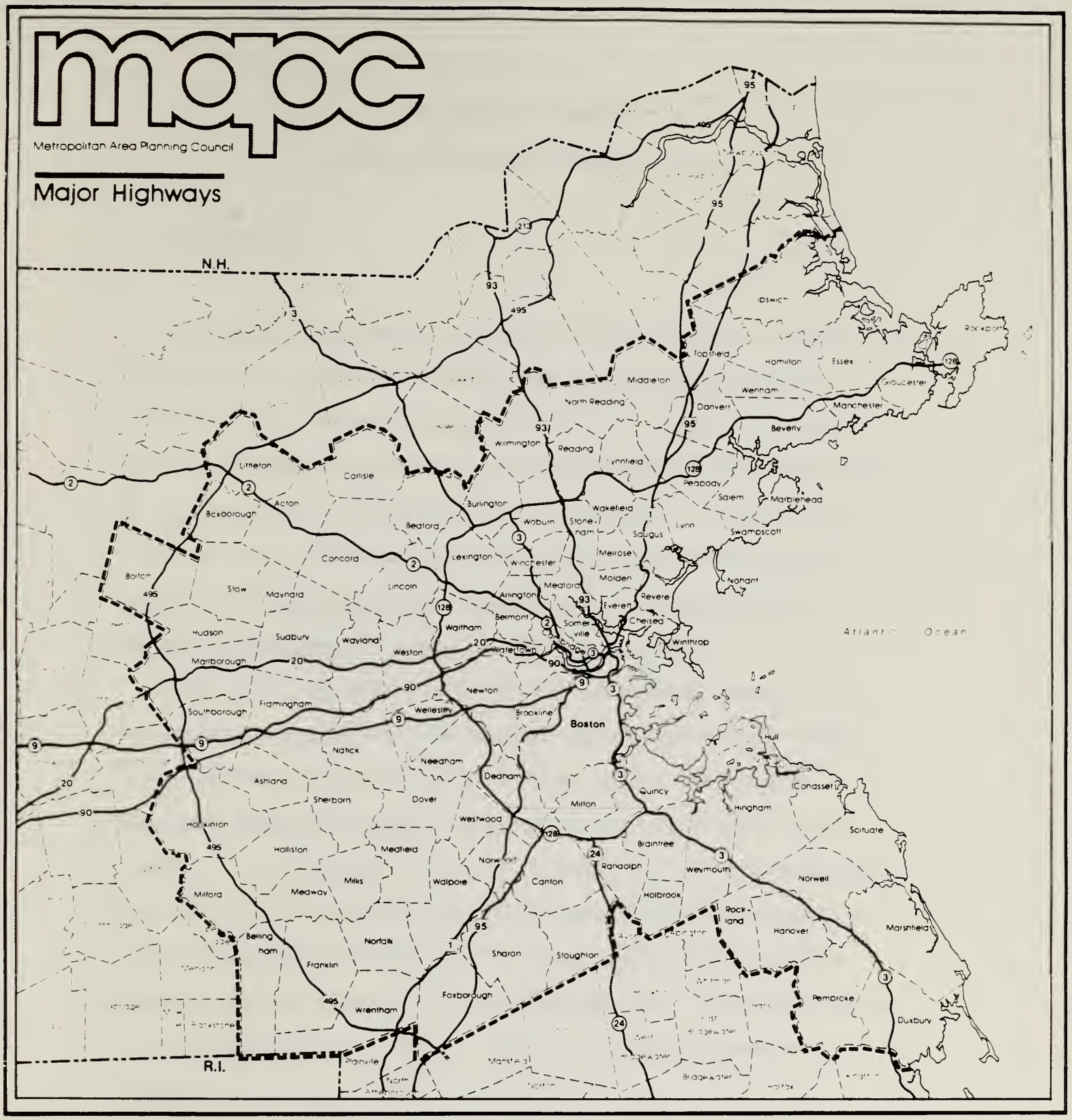


Scale in Miles

4 2 0 4 8 12

95 Interstate
1 U.S. Routes
9 State Routes
MAPC boundary

NORTH

Source Massachusetts Dept. of Public Works

Drawn: September, 1978

REGIONAL AND COMMUNITY
POPULATION AND EMPLOYMENT OUTLOOK

I. INTRODUCTION

New regional and community population and employment forecasts have been completed by the Metropolitan Area Planning Council (MAPC). Forecasts are presented here for 101 cities and towns in five-year intervals through the year 2010. These new community-level forecasts are systematically interrelated to earlier regional forecasting and community data collection efforts presented in these MAPC reports: Population Age Group Forecast, Employment and Income Forecasts, and Business and Residential Growth in Metropolitan Boston.

Development information was collected on proposed industrial, commercial and residential developments and an inventory of vacant sites updated. We also reviewed national, state, and regional forecasts developed by other organizations and identified the key strengths and constraints likely to influence future regional growth. MAPC polled local officials concerning their actions encouraging or discouraging additional population and employment growth and made assumptions about changes in future household size. Finally, officials in each community were asked to review and comment on these new forecasts.

These forecasts are used in a variety of planning activities including the sizing and placement of transportation, water, and sewer infrastructure projects and in some marketing and corporate development plans. The forecasts are based on an extension of recent trends, combined with certain demographic and other factors which can be reasonably anticipated. In the context of the Council's ongoing MetroPlan 2000, these forecasts provide a perspective on development within the region without public intervention.

II. FORECAST IMPLICATIONS

The forecasts presented in this report primarily reflect the extension of long-established development trends. It is our earnest hope that the reader will be drawn to ask the most basic question about these forecasts: is this the kind of future that I want for myself?

Just a few of the broadest and most obvious consequences of our forecasts are listed below. To those that harbor misgivings about the future presented, we urge that they join with the MAPC in implementing a plan, MetroPlan 2000, for guiding the future development pattern in metropolitan Boston.

Among the broad implications of our forecasts are:

- A reduced rate of new household formation and population growth means a drop in new construction. The rate of consumption of land for low-density housing will decline.
- Labor will be in short supply, especially for entry-level positions, improving the relative economic standing of low-income workers. Employment sectors that are sensitive to labor costs--manufacturing and retail trade for instance--may expand at lower rates.

- o Nonresident commuters will provide an increasing proportion of new labor. The increasing volume and distance of their worktrips will produce a dramatic rise in energy consumption making the region's economy, already highly dependent on foreign supplies of oil, even more vulnerable to the shock of energy shortages and rapid price increases. Air pollution will also increase.

- o Substantial investment in additional highway and commuter rail facilities may be required to move workers to employment sites. New developments will be sited with availability of labor as a critical consideration.

III. REGIONAL OUTLOOK

Regionwide, population growth of 2.5% is projected between 1986 and 2010, an increase from 2,882,990 to 2,953,230 persons. Seventy percent of this growth is expected by 1990, with progressive reductions in the rate of growth in succeeding decades (see figure 1). Regionwide, employment is forecast to grow 19% between 1986 and 2010, an increase from 1,702,505 to 2,032,500 jobs. Almost 55% of this growth is forecast by 1990 (see figure 2). Dramatic reductions in the rate of employment growth are forecast in subsequent decades.

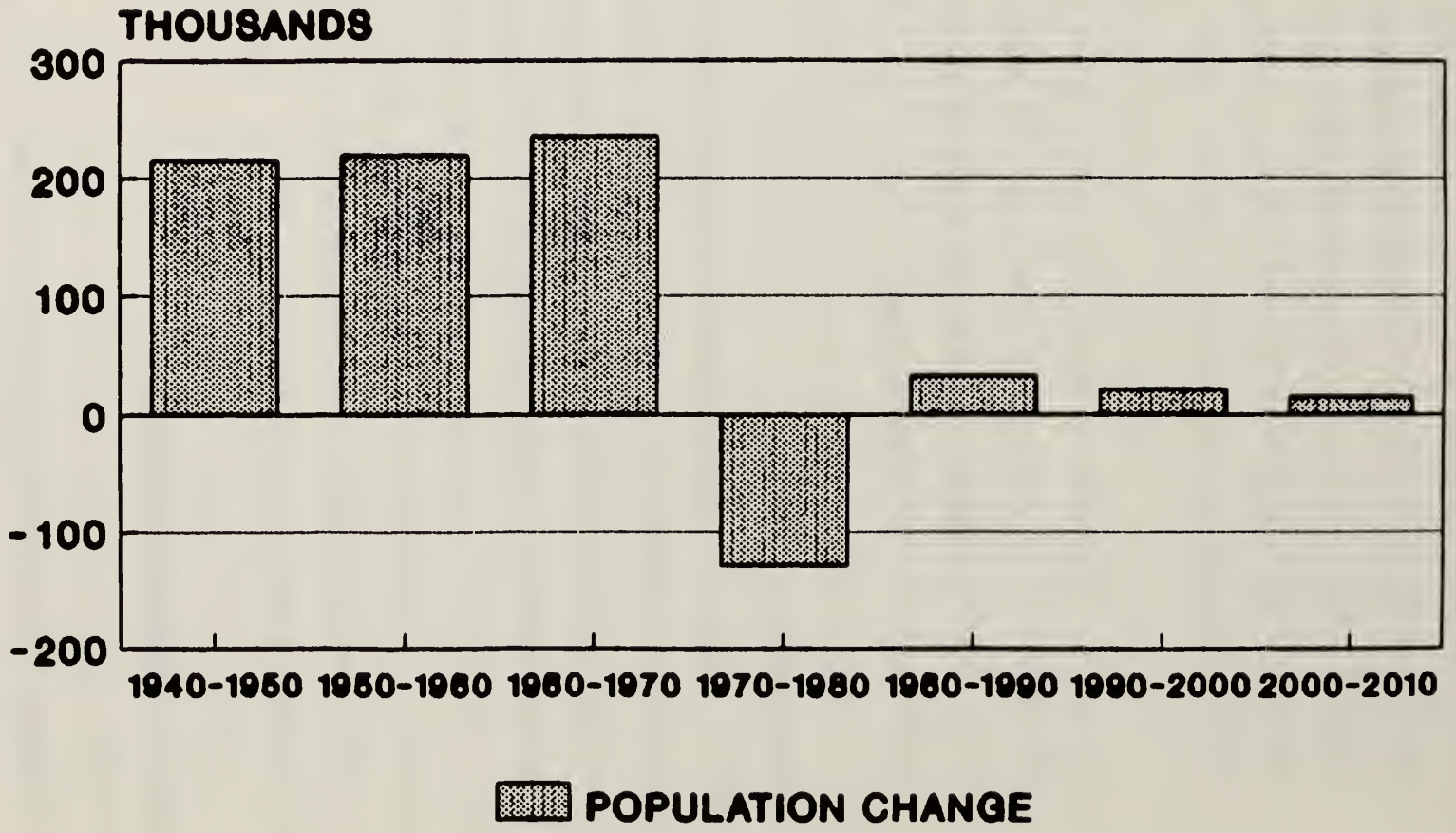
IV. FORECASTS BY TRANSPORTATION CORRIDOR

A. POPULATION

The outlook by transportation corridor (as defined in figure 3)

FIGURE 1

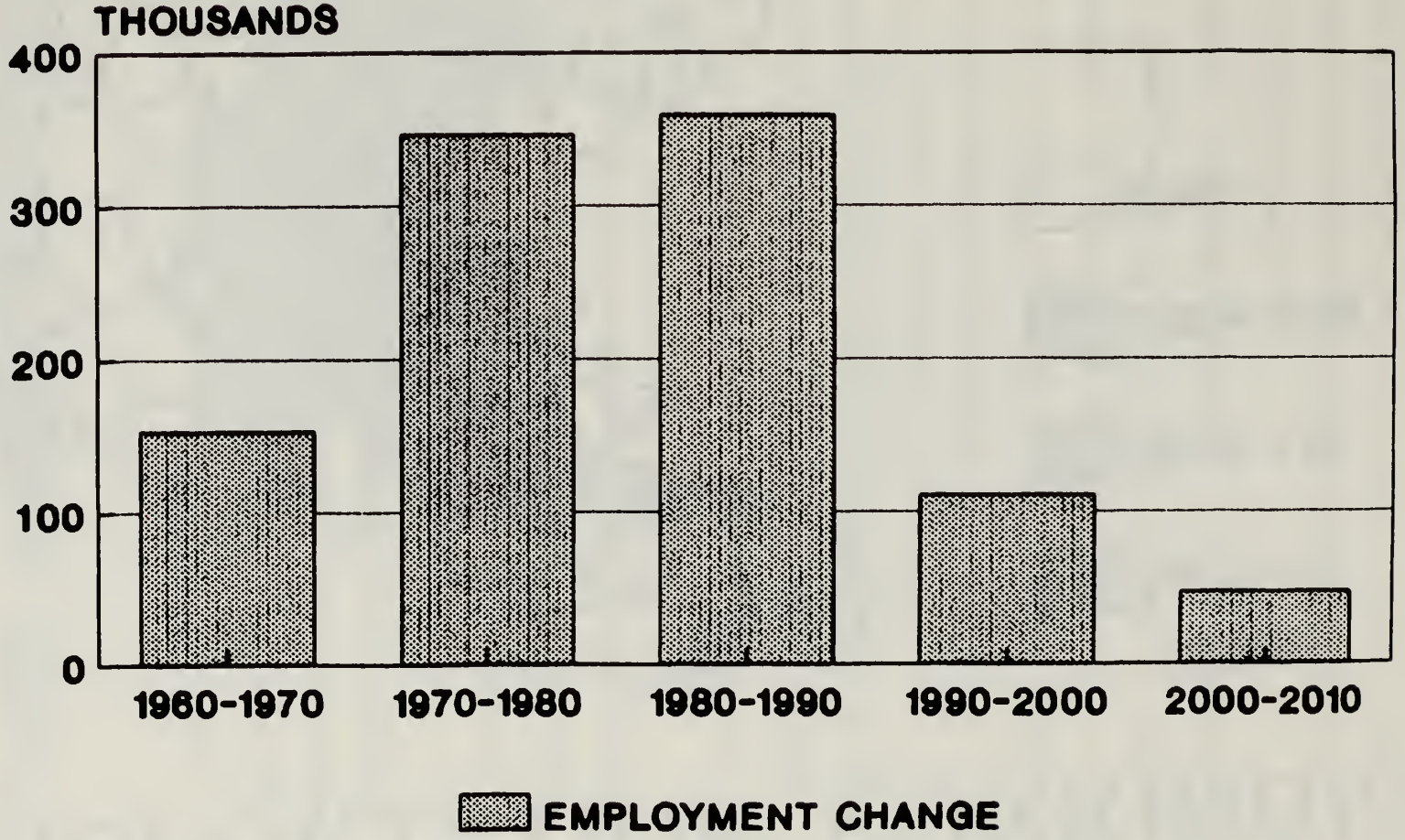
MAPC REGION
POPULATION CHANGE (1940-2010)



SOURCES: BUREAU OF THE CENSUS.
METROPOLITAN AREA PLANNING COUNCIL.

FIGURE 2

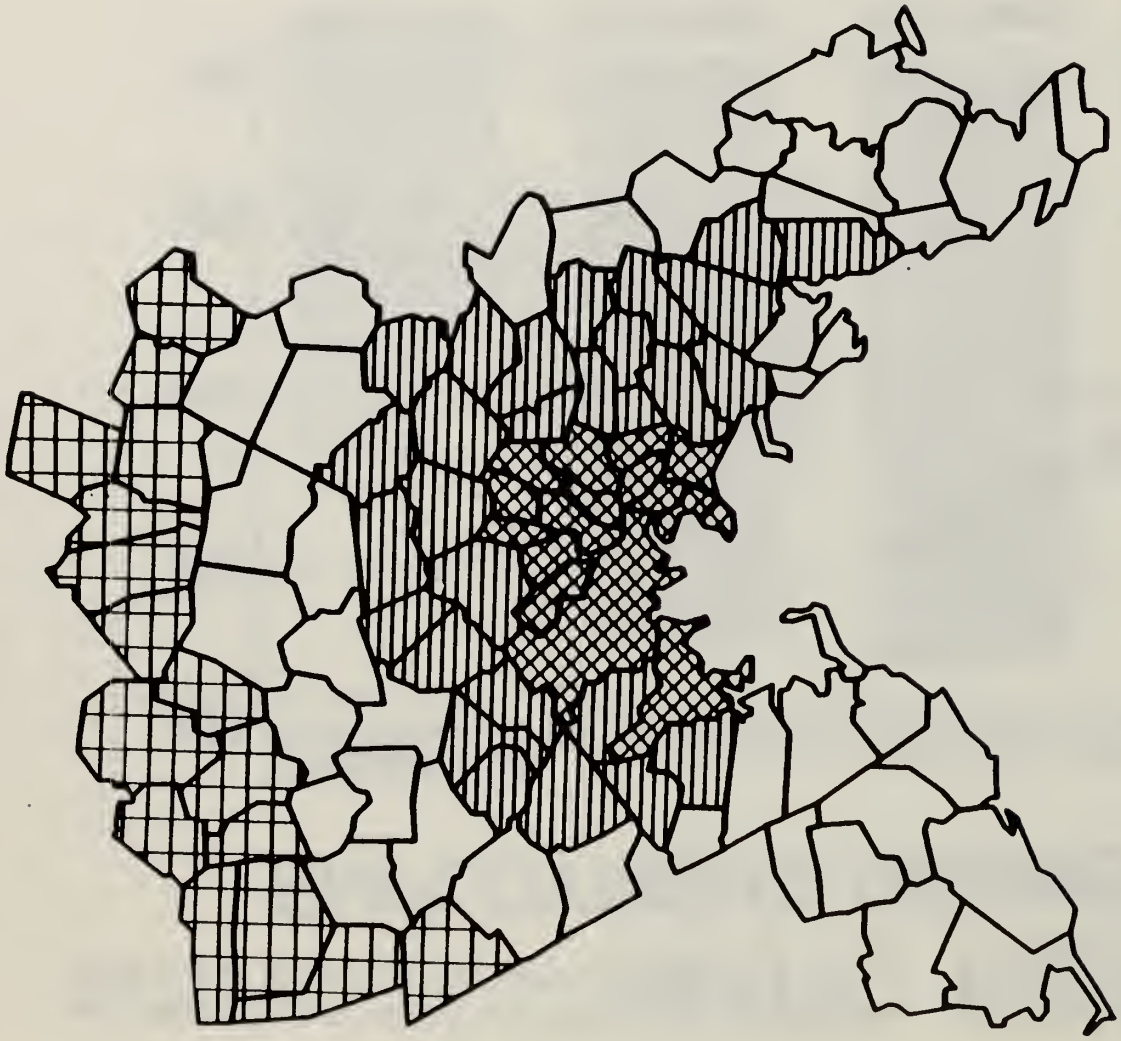
MAPC REGION
EMPLOYMENT CHANGE (1960-2010)



SOURCES: DEPARTMENT OF EMPLOYMENT AND TRAINING.
METROPOLITAN AREA PLANNING COUNCIL.

FIGURE 3

TRANSPORTATION CORRIDORS



Legend

ROUTE 495

ROUTE 128

URBAN CORE

OTHER

SOURCE: MAPC

shows further suburbanization of population, so pronounced in previous decades. However, three important changes are indicated (see figure 4): a reducedrate of population growth in the outer suburbs, small population losses in the inner suburbs along Route 128, and small population growth in the urban core.

We expect that two long-established trends: (1) new growth in less densely settled communities at the edge of the region and (2) fewer persons per household, will continue during the forecast period. However, because of a sharply reduced rate of new household formation and a continuation of relatively high housing costs, the rate of suburbanization will diminish from that of recent decades. The financial wherewithal for moderate population growth on the edge of our region will result from the increasing number of two-income households.

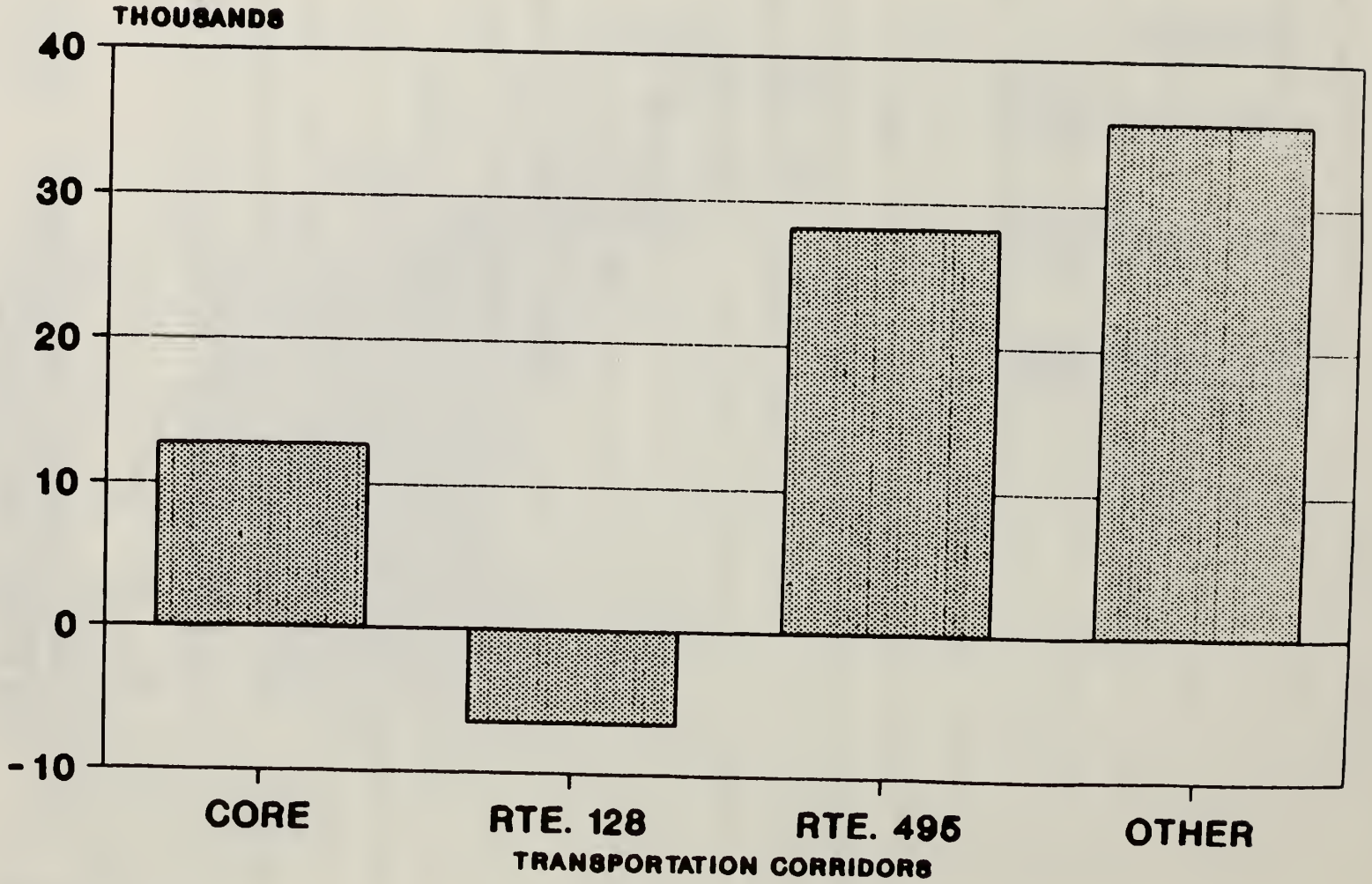
The majority of the region's communities will show little or no change in population size, in line with the small increase in region-wide population. In these communities, a population reduction in existing dwelling units, due to an expected decline in the average household size, will be offset by a moderate population increase in new, mostly infill, housing units[1]. In some inner suburban communities generally located near Route 128, resistance to additional development and already-high population densities implies that further decline in average household size (caused in part by children leaving their parents' home) will produce some population loss. Of course, new

---

[1]U.S. Department of Commerce. Bureau of Census. "Projections of the Number of Households and Families: 1986 to 2000." Current Population Reports. Series P-25, No. 986. May 1986.

FIGURE 4

NET POPULATION CHANGE
BY TRANSPORTATION CORRIDOR: 1986-2010



SOURCE: MAPC

families will gradually replace the large number of households "aging in place" in such communities.

At the same time, a surge of new office development, especially in Boston and Cambridge, continues to make urban living attractive and convenient to many of those employed there. This is especially true for the unmarried or childless couples of the baby-boom generation. Some suburban couples who have completed child-rearing also may seek to relocate in urban communities rich in entertainment, shopping and restaurant amenities.

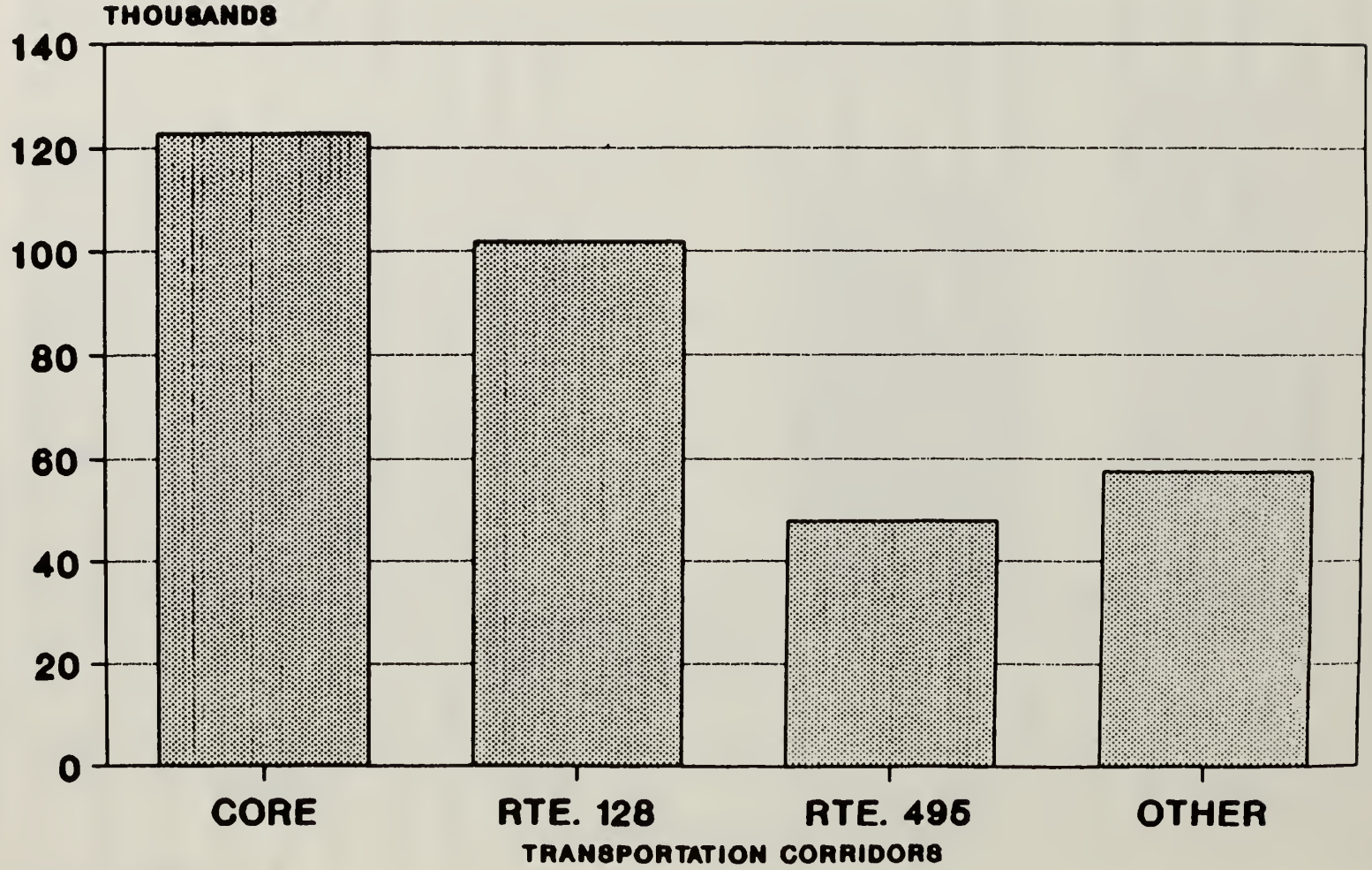
Of course, high housing costs and a lack of affordable housing opportunities may prevent many low- and moderate-income families, now living in the urban core and in a few older satellite centers, from moving to more suburban localities. Blacks and Hispanics will represent a large and growing proportion of the population in some of these urban communities.

B. EMPLOYMENT

Employment growth is expected to concentrate in the urban core and along the major highways, especially Route 128 (see figure 5). The projected number of new jobs drops progressively from the core to Route 128 and through Route 495. These are long-established patterns which reflect the location of the region's major airport near downtown Boston and the absence of a major secondary airport. Many financial, business, and medical services essential to New England's economic health require convenience to an airport, and proximity to concentrations of government offices, corporate clients, and competitors. Many high-value, technologically advanced products are also exported via air freight.

FIGURE 5

NET EMPLOYMENT CHANGE
BY TRANSPORTATION CORRIDOR: 1986-2010



SOURCE: MAPC

Businesses engaged in R & D and distribution activities often choose less expensive land with good access to the interstate highway network, where the local labor force is growing or long-distance commuting relatively convenient, a mixture of amenities found along I-495. Though smaller in employment size, these activities are central to the future economic vitality of the region.

However, a steady flow of Boston and Cambridge businesses seem likely to seek less expensive office space, especially "back office" space, in more suburban locations. Especially favored are sites near rapid transit stations, so that low and moderate-income employees have easy access to work.

V. COMMUNITY OUTLOOK

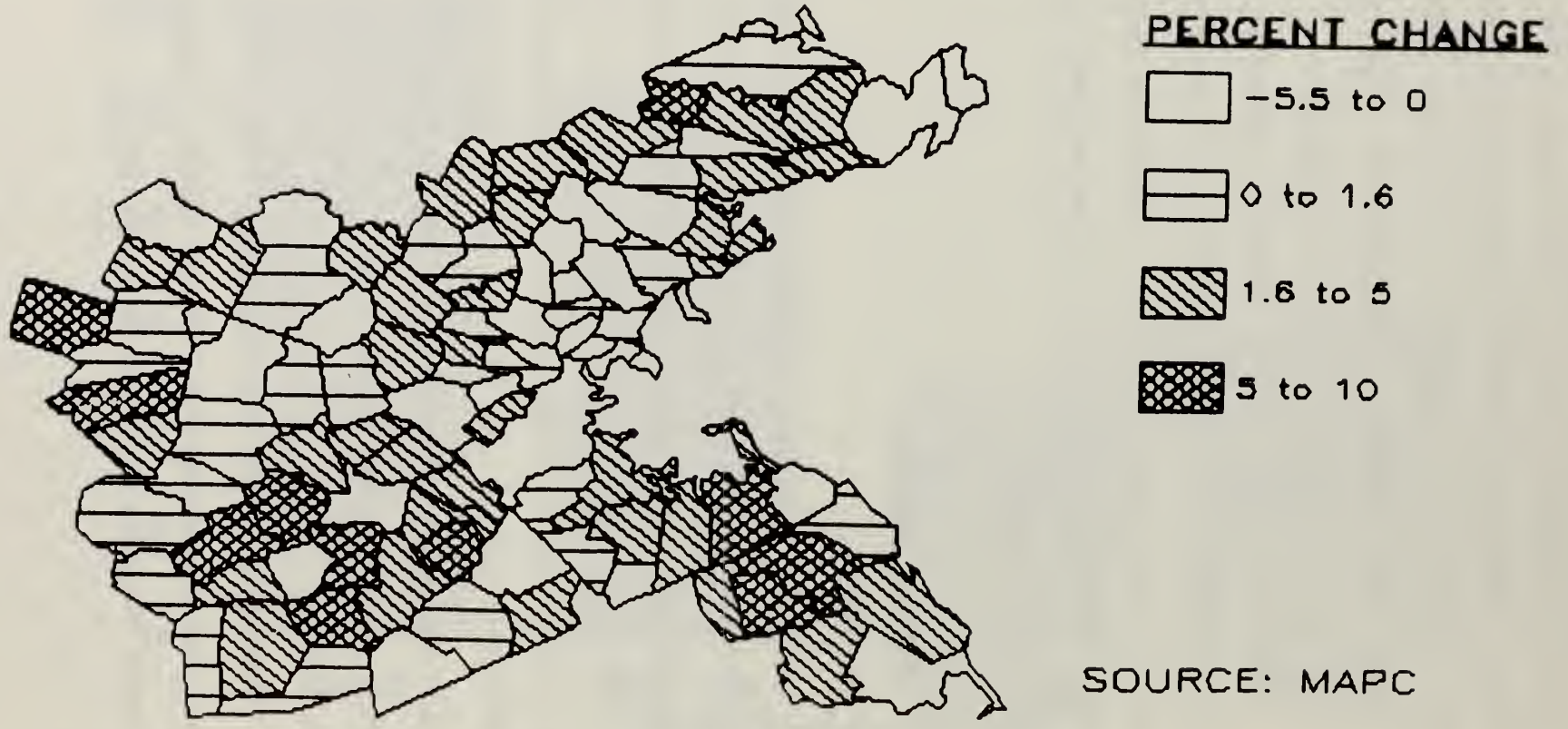
A. POPULATION

Individual community forecasts vary significantly from the expected regional pattern (see figures 6 through 9). Notably, northern- and southern-Route 495 communities should experience above-average growth in population. Population is projected to grow 37% in Franklin, 30% in Bellingham, 29% in Bolton, and 27% in Boxborough by 2010. Other communities located west of Route 128 are predicted for rates of population growth between 15% and 24%, including Ashland, Carlisle, Medway, Sherborn, and Southborough, along with the more northerly Middleton.

Stable population size is expected in most older, more densely developed communities. Most of the region's largest cities will maintain their current level or lose slightly, including Boston,

FIGURE 6

PERCENTAGE POPULATION GROWTH
1986–1990



SOURCE: MAPC

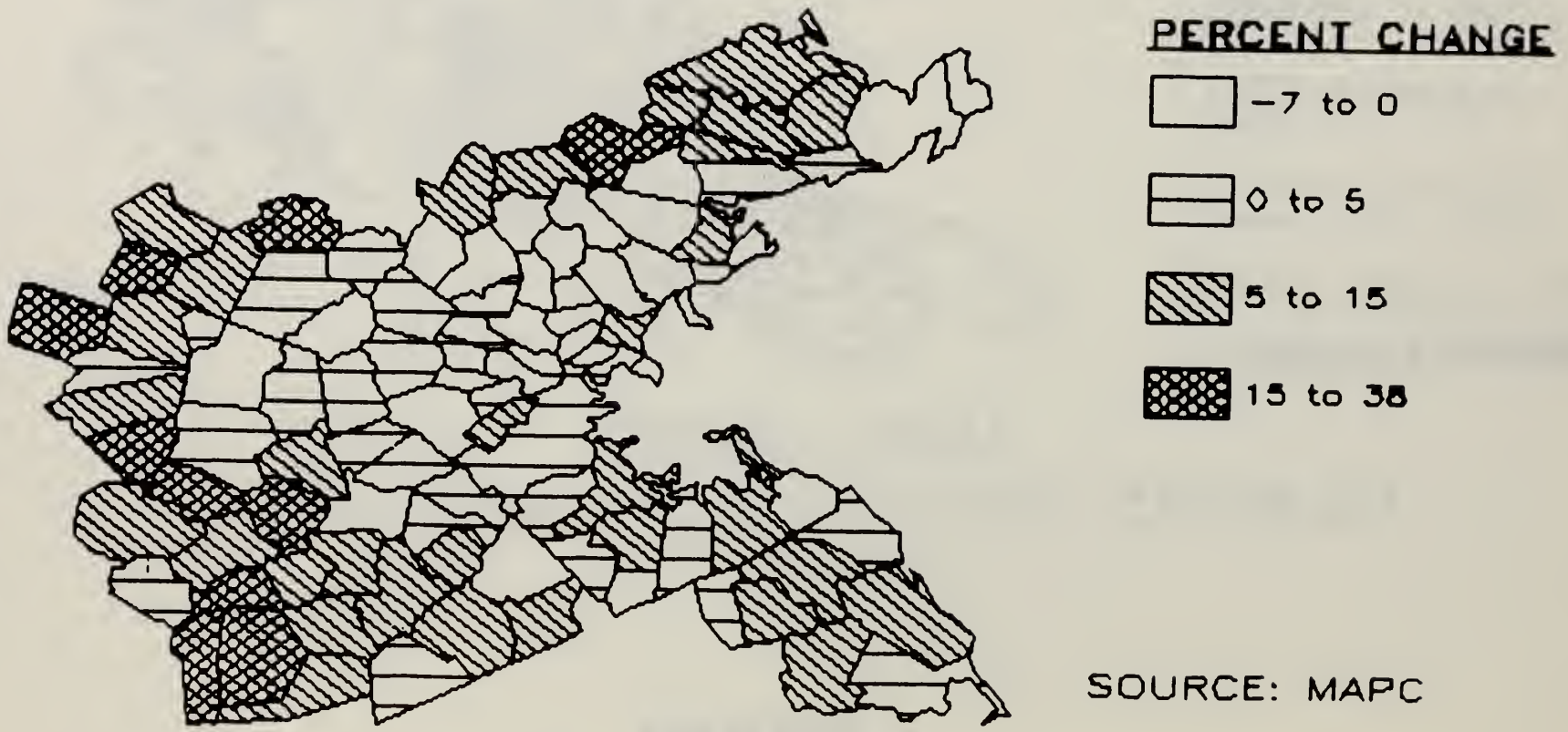
FIGURE 7

ABSOLUTE POPULATION GROWTH
1986–1990

SOURCE: MAPC

FIGURE 8

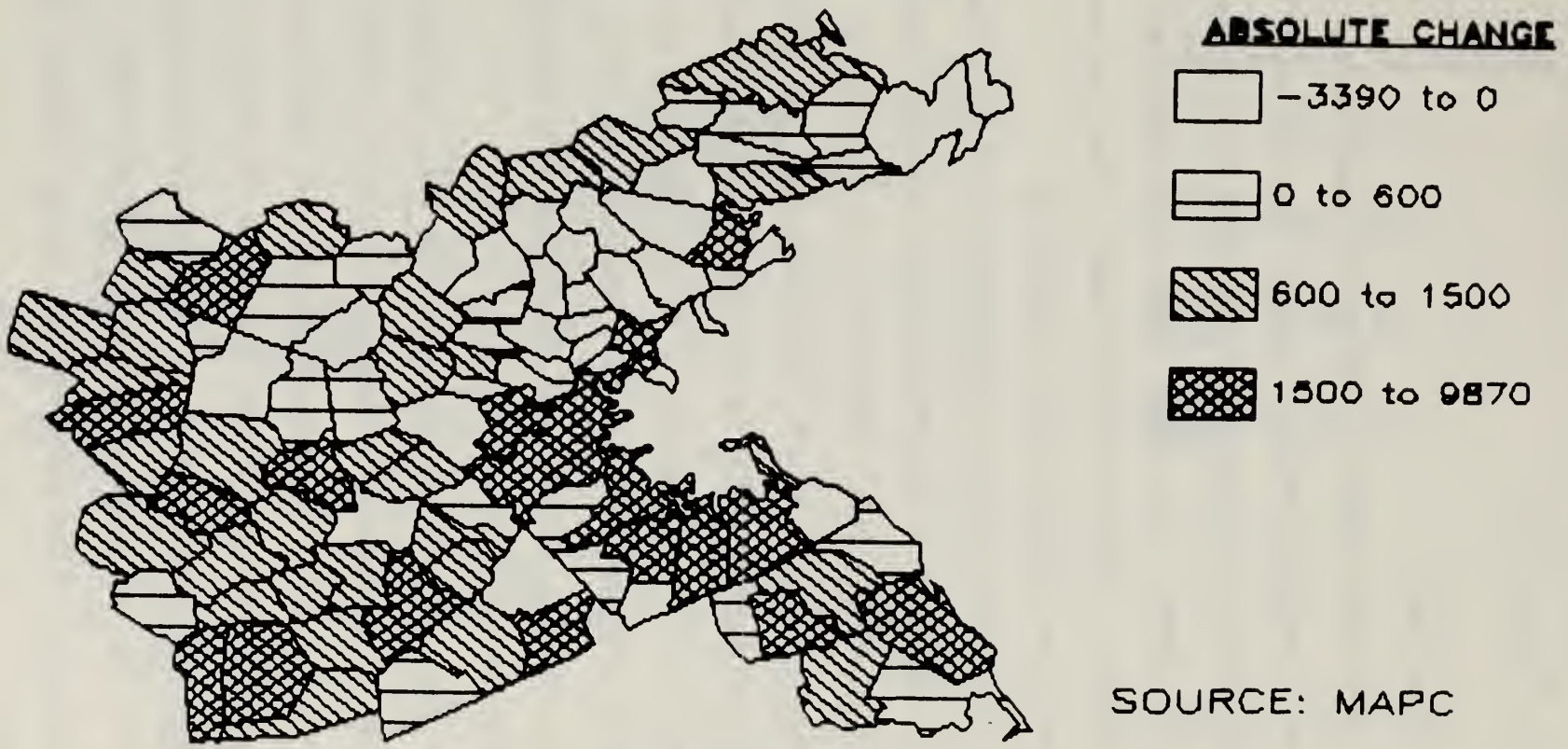
PERCENTAGE POPULATION GROWTH
1986–2010



SOURCE: MAPC

FIGURE 9

ABSOLUTE POPULATION GROWTH
1986–2010



SOURCE: MAPC

Cambridge, Framingham, Newton, and Somerville. Lynn and Quincy are projected to have the most dramatic changes, with a 4% loss and an 11% gain, respectively.

B. EMPLOYMENT

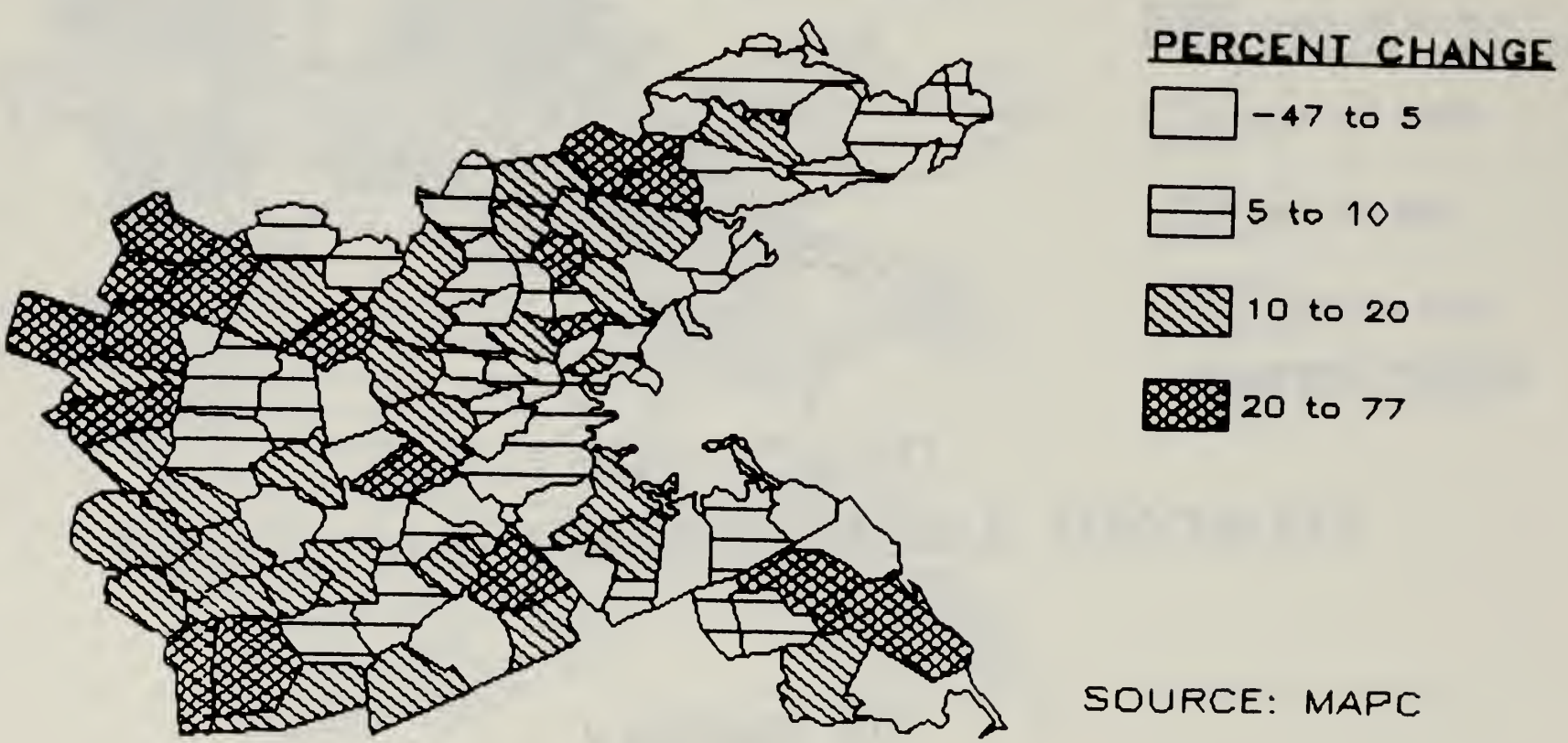
Individual community employment forecasts also vary significantly from the expected regional pattern (see figures 10 through 13). Most communities in the region are projected to experience major increases in employment. The highest rates of job growth are projected for the I-495 area, while the largest number of new jobs are expected for communities located inside of Route 128.

The highest rates of employment growth are projected in Franklin - 78%, Bellingham--128%, Marlborough--110%, Boxborough--176%, Stow--89%, and Littleton--106%. Communities west of Route 128 including Acton, Ashland, Bolton, Lincoln, Marlborough, Milford, Southborough, Stow, and Wrentham are projected for employment growth between 31% and 67%. Some communities located between I-95 and Route 3 in the south, including Canton, Hingham, Pembroke, and Rockland, and in the north, including North Reading, Peabody, and Danvers are also expected to gain employment of between 28% and 37%.

Communities in the region's urban core, currently with the largest number of employed, are expected to gain the largest number of additional jobs. The city of Boston will capture more than 76,000 jobs, a growth rate of 14%, and 23% of the region's total employment growth from 1986 to 2010. Other communities projected to gain more than 7,000 new jobs each are Braintree, Burlington, Cambridge, Framingham, Marlborough, Peabody, Quincy, Waltham, Wilmington, and Woburn.

FIGURE 10

PERCENTAGE EMPLOYMENT GROWTH
1986–1990



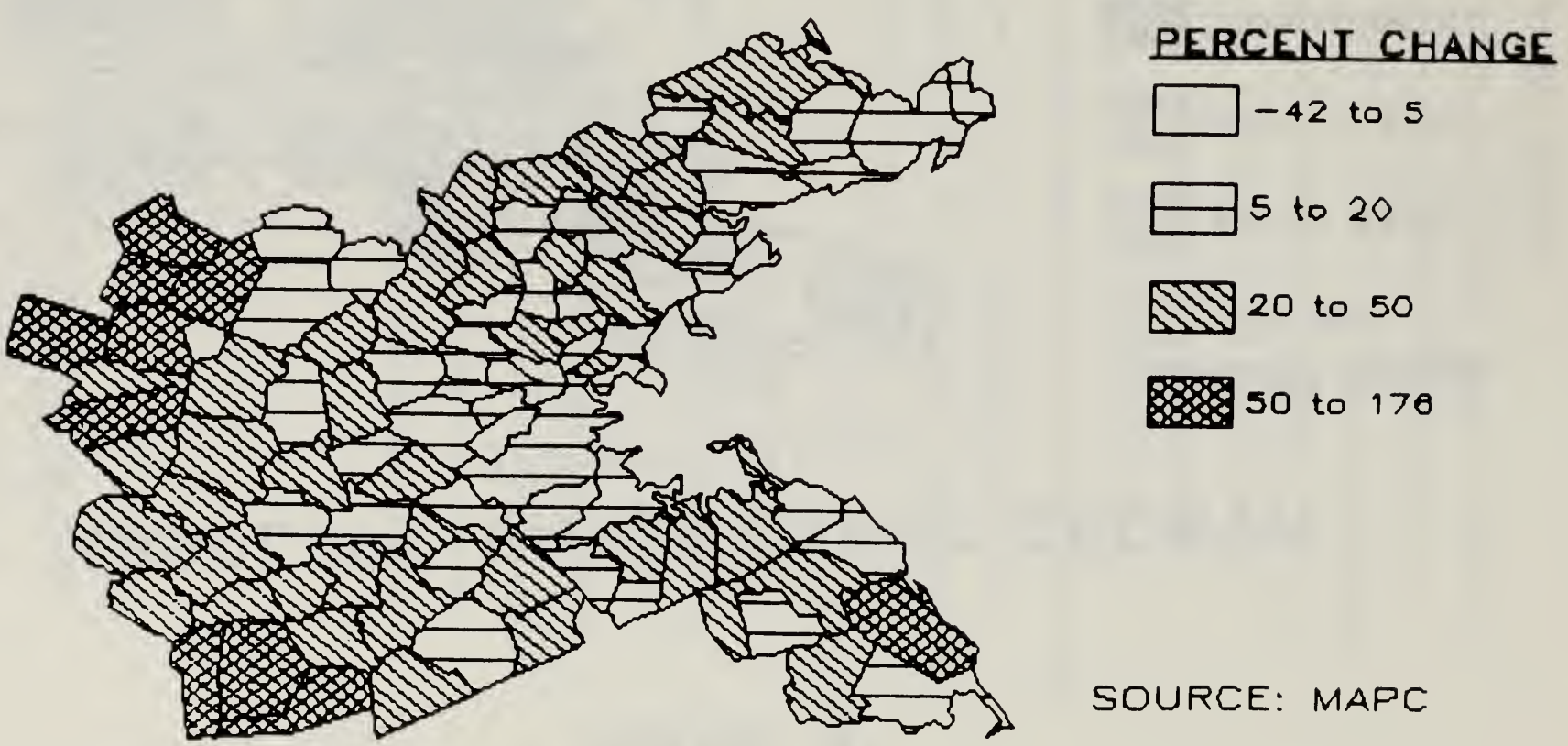
SOURCE: MAPC

FIGURE 11

ABSOLUTE EMPLOYMENT GROWTH
1986–1990

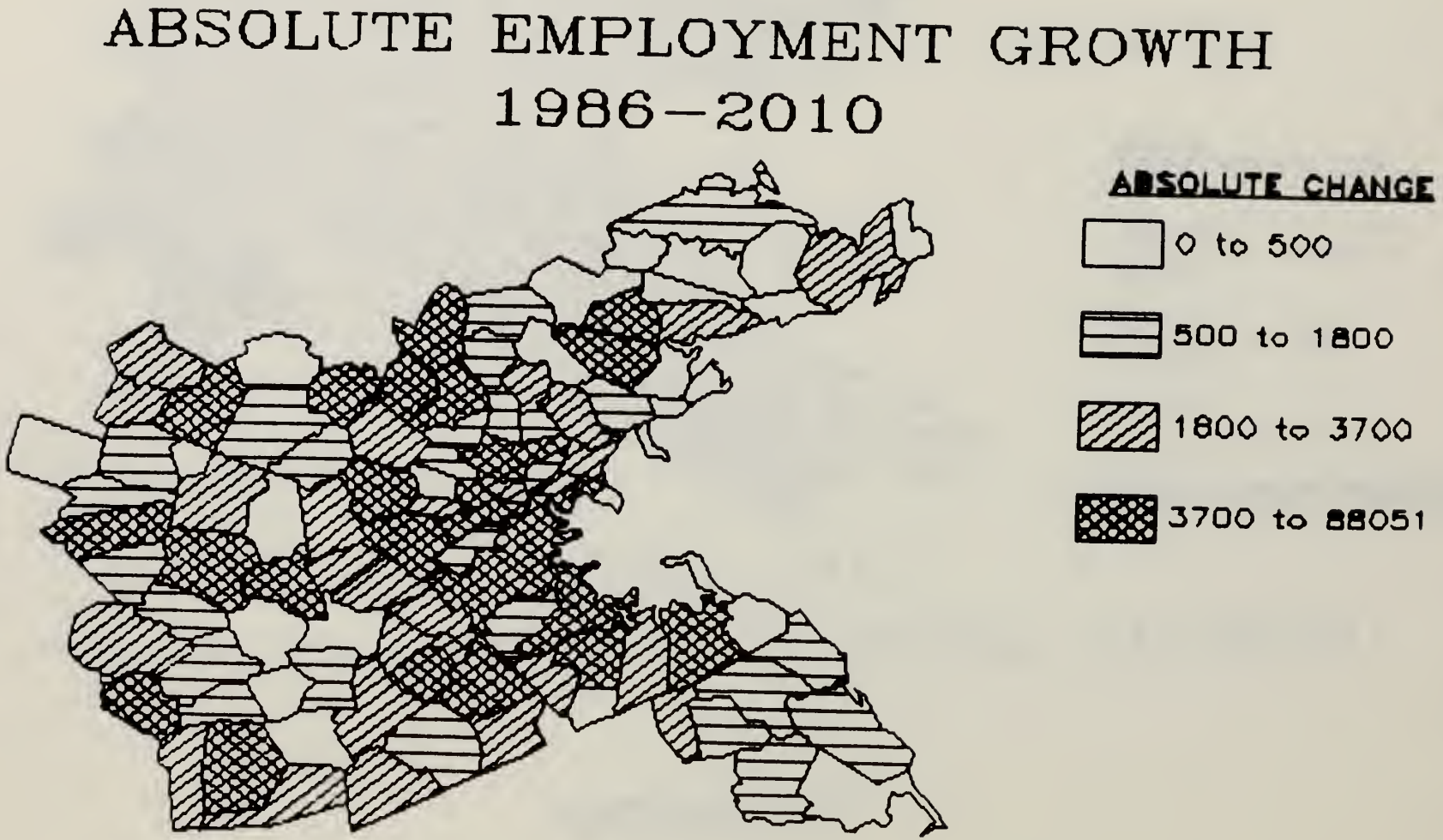
FIGURE 12

PERCENTAGE EMPLOYMENT GROWTH
1986–2010



SOURCE: MAPC

FIGURE 13


ABSOLUTE EMPLOYMENT GROWTH
1986–2010
ABSOLUTE CHANGE
0 to 500
500 to 1800
1800 to 3700
3700 to 88051

VI. KEY INFLUENCES ON REGIONAL FORECASTS

MAPC's community forecasts were developed through a "bottom up" evaluation of the quantity of vacant land zoned for industrial or commercial development, our file of recent or proposed developments, and our perception of local attitudes toward new growth. The exact procedures used are outlined in a later section of this report. However, community forecasts of population and employment, in aggregate, could not exceed overall regional forecasts (control totals). These regional forecasts were developed by a "top down" means independent of our "bottom up" method[2]. Key factors identified as likely to be prime determinants of the future level of population and employment in the MAPC region are discussed below.

A. POPULATION

Our forecast of a small increase in the region's population is based on two major elements. We expect a large drop in the rate of natural increase over the next two decades and a continued, though reduced, rate of net out-migration. One important influence on both natural increase and migration to the region is the high cost of living, particularly for housing. A closer look at these factors is given below.

---

[2] Population Age Group Forecast and Employment and Income Forecasts. Metropolitan Area Planning Council. June 1989.

1. LOW NATURAL INCREASE

Births and deaths together result in the natural increase of population. The region's rate of natural increase has been consistently below that of the nation and is expected to remain so (see figure 14). This primarily reflects a birth rate which is far lower than that for the nation (see figure 15). A slight rise evident in natural increase since 1980 is due to the large size of the baby-boom generation now having their children and the relatively late age at which this occurs in our region compared to the nation.

Natural increase is expected to decline from its already low level because the relatively large number of "baby boomers" will soon complete their families and be replaced by a much smaller cohort (age group). During the 1980s, we estimate a natural increase of approx. 120,000 in the MAPC region's population, based on a modified Cohort-Migration- Survival method. By comparison, during the 2000s a much smaller generation of young adults are projected to produce a natural increase of just 60,000 [3].

If the current low fertility rate is sustained, then sometime after 2010 the region's population size will begin a long-term decline, unless offset by net in-migration. This is because the region's total fertility rate is currently some 30% below the rate required for eventual population replacement.[4]

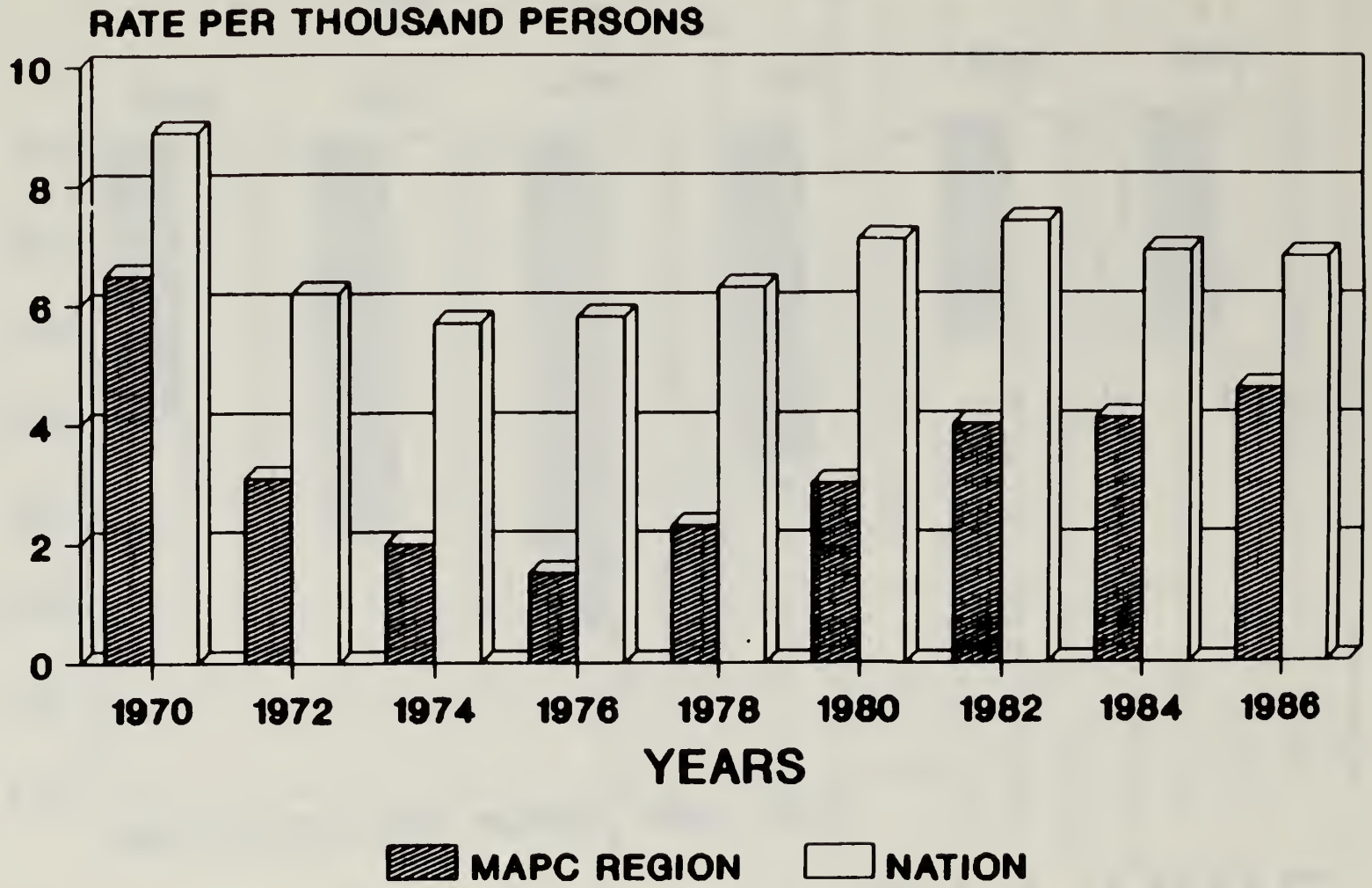
---

[3] Population Age Group Forecast. Metropolitan Area Planning Council. June 1989. p. 9.

[4] One measure of which indicates the required fertility for eventual population replacement is the total fertility rate. This is the number of children that would be born to a woman if she were to bear at the same rate throughout her lifetime. This rate in the region is currently just 1.5 children compared to the 2.1 required for eventual replacemnt.

FIGURE 14

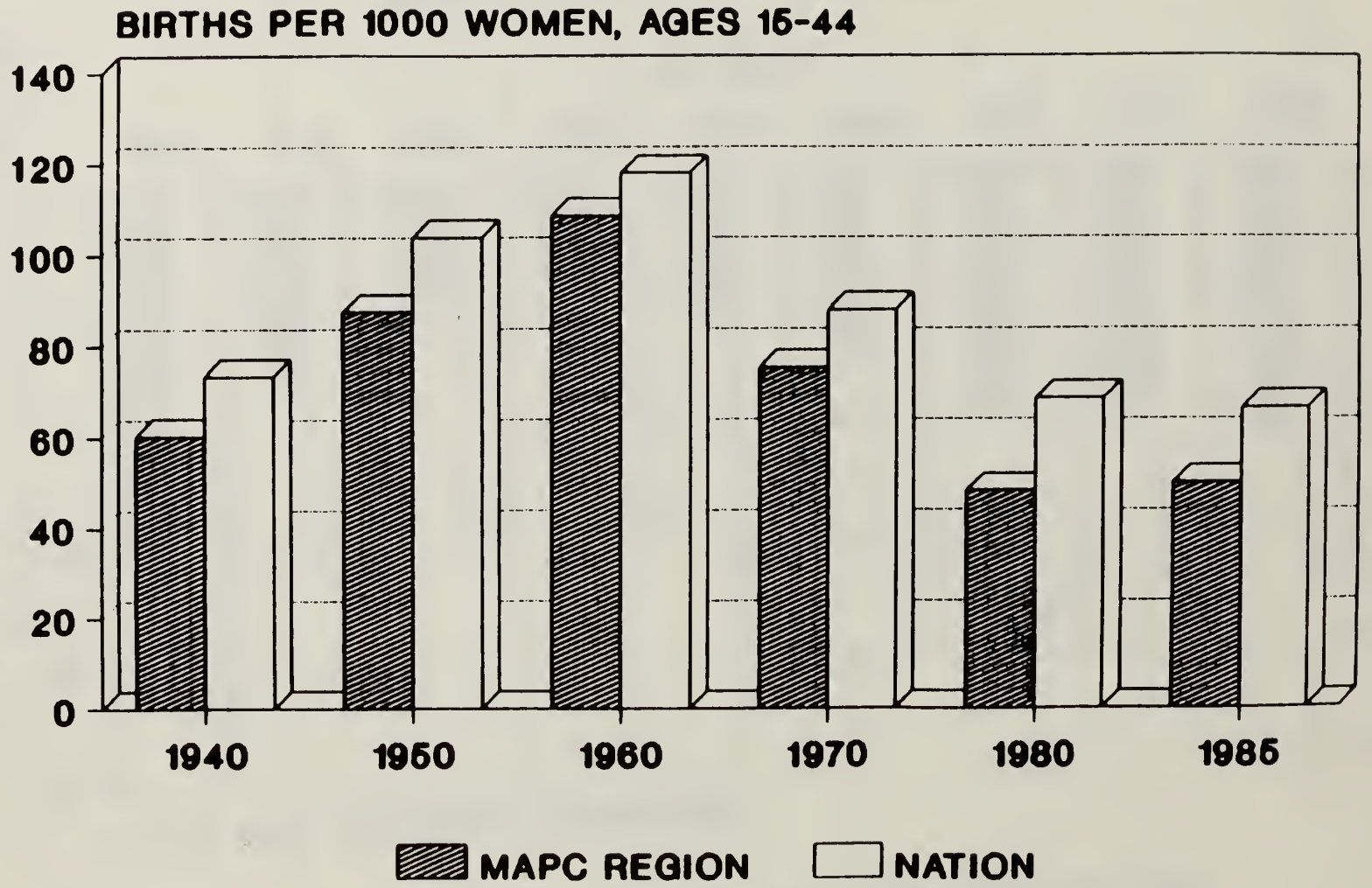
NATURAL INCREASE



SOURCE: VITAL STATISTICS OF THE U.S.
REGIONAL ESTIMATES BY MAPC

FIGURE 15

GENERAL FERTILITY RATE



SOURCE: MA. DEPT OF PUBLIC HEALTH & MAPC

There are several important factors which seem likely to keep the region's fertility rate low. One factor is an expected increase in the labor force participation of women, reducing the time and effort available for raising children. The high level of education prevalent among the region's women typically is correlated with having relatively few children. Well-educated women tend to view children and career as a trade-off and delay marriage and children until late in life; some women opt out of marriage and children entirely. Based on present trends, as many as one-quarter of all young adult women may ultimately remain childless.

A second important disincentive to an increase in family size is the region's high cost of housing. Choosing to have more children reduces the family income available for shelter costs and could increase the size of the home needed. The average price of a home in the Boston area is $189,000, more than five times estimated 1989 family income.

2. CONTINUED NET OUT-MIGRATION

Population size can also change when more persons migrate into an area than leave or vice-versa, after adjustment for natural increase. We expect a gradual reduction in the rate of net out-migration over the next two decades. More persons have left than entered the MAPC region during each decade since the 1940s (see figure 16). However, the rate of loss has recently subsided from the steep losses of the 1970s. By the decade after 2000, net out-migration is projected at just -45,000, down from the -88,000 estimated for the 1980s.[5]

Several influences are likely to reduce, but not eliminate, net population outflow. First, the upcoming generation of young adults and new retirees will be much smaller than in previous decades. Young adults move frequently and to more distant destinations than do other age groups. During the previous two decades, the flow of retirees to the sunbelt has caused a significant portion of the region's population loss. Second, improving economic conditions may increase the incentive of young adults to stay. The region's economic diversity, its high-value goods and services, and a slowly growing labor supply will produce stronger-than-average income growth, and a low rate of employment.[6]

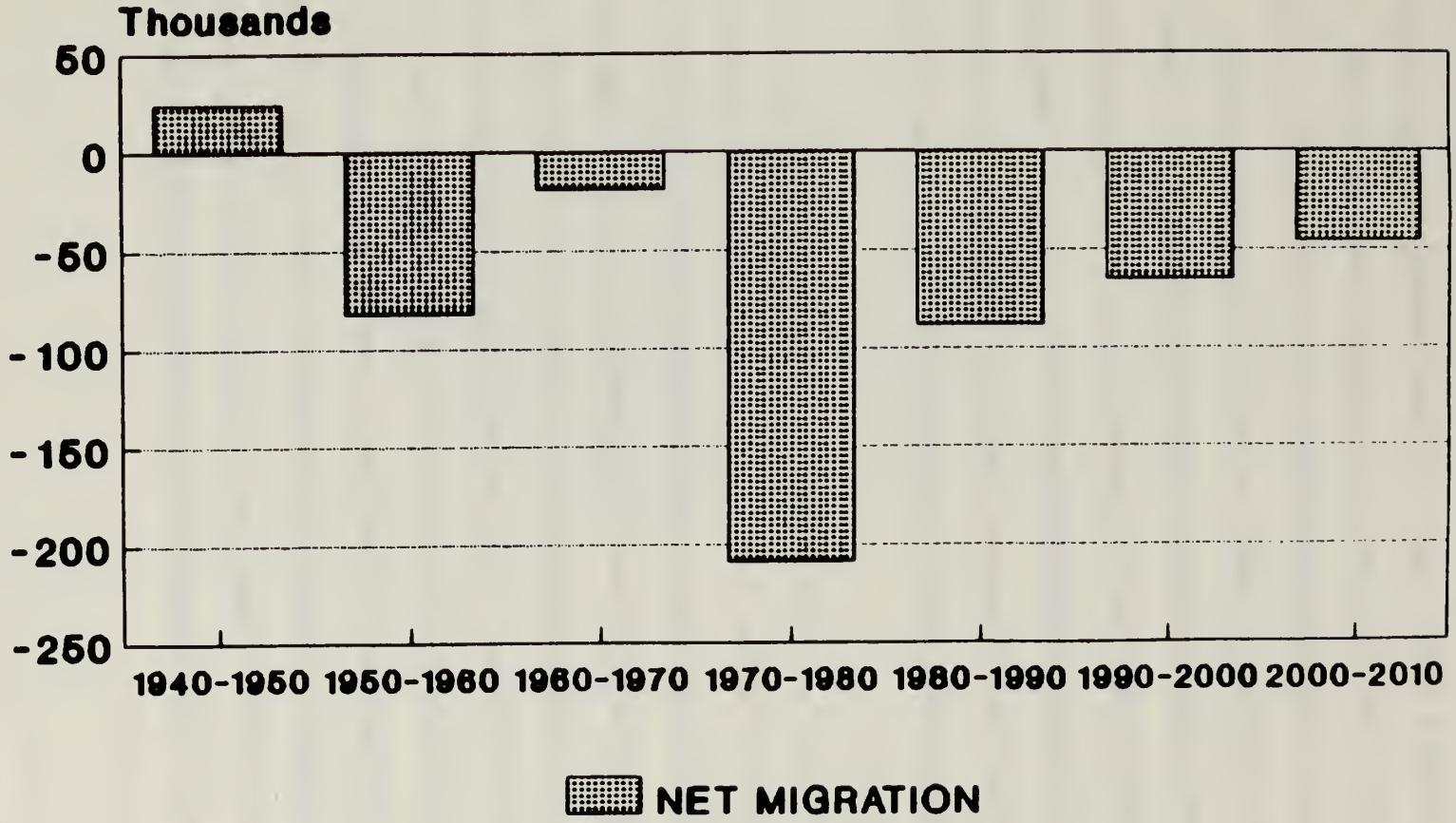
---

[5] The number of nonresidents working in the region can be estimated by taking the number of workers in the community where the jobs are performed, and subtracting the number of workers in the community where they reside and the number of residents commuting to outside of the region. Population Age Group Forecast. MAPC. June 1989. p. 11-13.

[6] Employment and Income Forecasts. MAPC. June 1989.

FIGURE 16

MAPC REGION
NET MIGRATION (1940-2010)



SOURCES: BUREAU OF THE CENSUS.
METROPOLITAN AREA PLANNING COUNCIL.

Third, changes in both the supply and demand for housing could reduce the rate of net out-migration. Today, record high housing prices are encouraging a large supply of homes to come onto the market, moderating the recent rate of price appreciation. Over the next two decades a much smaller generation of young home buyers could reduce the demand for new homes, resulting in "soft" or even declining home prices.[7]

Taken together however, these changes seem insufficient to reverse the four-decade pattern of net out-migration. The region's cost of living has been much higher than elsewhere for many decades. These above-average costs, especially for homes and rent, seem likely to prevail in the face of widespread low density zoning and the lack of new apartment construction.

There are two conditions which could significantly alter the level of future net migration: the relatively prosperous and diversified economies of the New England and Middle Atlantic regions and the poor economic conditions in other countries with special cultural ties to this region.

With relatively good economic conditions in the states which surround metropolitan Boston, relatively few migrants are presently coming here. Our region's outlook for in-migration could improve, were it to fare better than the rest of New England and the Middle Atlantic in a long-term economic downturn. Locations compete with one another for potential migrants, with the competition especially intense among locations close to one another. Most migrants move from nearby states to where they eventually settle.

---

[7] N. Gregor Mainw and David N. Weil. "The Baby Boom, the Baby Bust, and the Housing Market." Unpublished Manuscript, Harvard University, November 1988.

While metropolitan Boston is one of many potential immigrant destinations, its high cost of housing and relatively small population of recent immigrants are major locational disincentives. The proposed Kennedy-Donnelly legislation does not radically alter existing immigration policies and quotas, but final disposition of this controverial issue is still uncertain. Ireland, Puerto Rico, Haiti, Vietnam, and Cambodia sent 9,300 legal immigrants to this region during one recent two-year period.[8] Illegal immigration from Ireland is significant because of special cultural ties to this area. An estimated 10,000 to 15,000 illegal Irish immigrants are living in parts of Boston and Somerville. Continued poor economic conditions in Ireland could produce a significant stream of immigration.

B. EMPLOYMENT

Our regional forecasts of employment are made in the context of expecting low population growth, low unemployment, and high income growth for the future. We expect that the supply of workers will be a limiting factor in the rate of future employment growth.

We can identify five sources of future labor supply increase that will provide the 335,000 new jobs we forecast. Nonresident commuters will provide 38%; an increase in female labor force participation 33%, growth in the population 16 to 65 years old 15%, an increase in male labor force participation 7%, and a reduction in the number of umemployed 6% (see figure 17).

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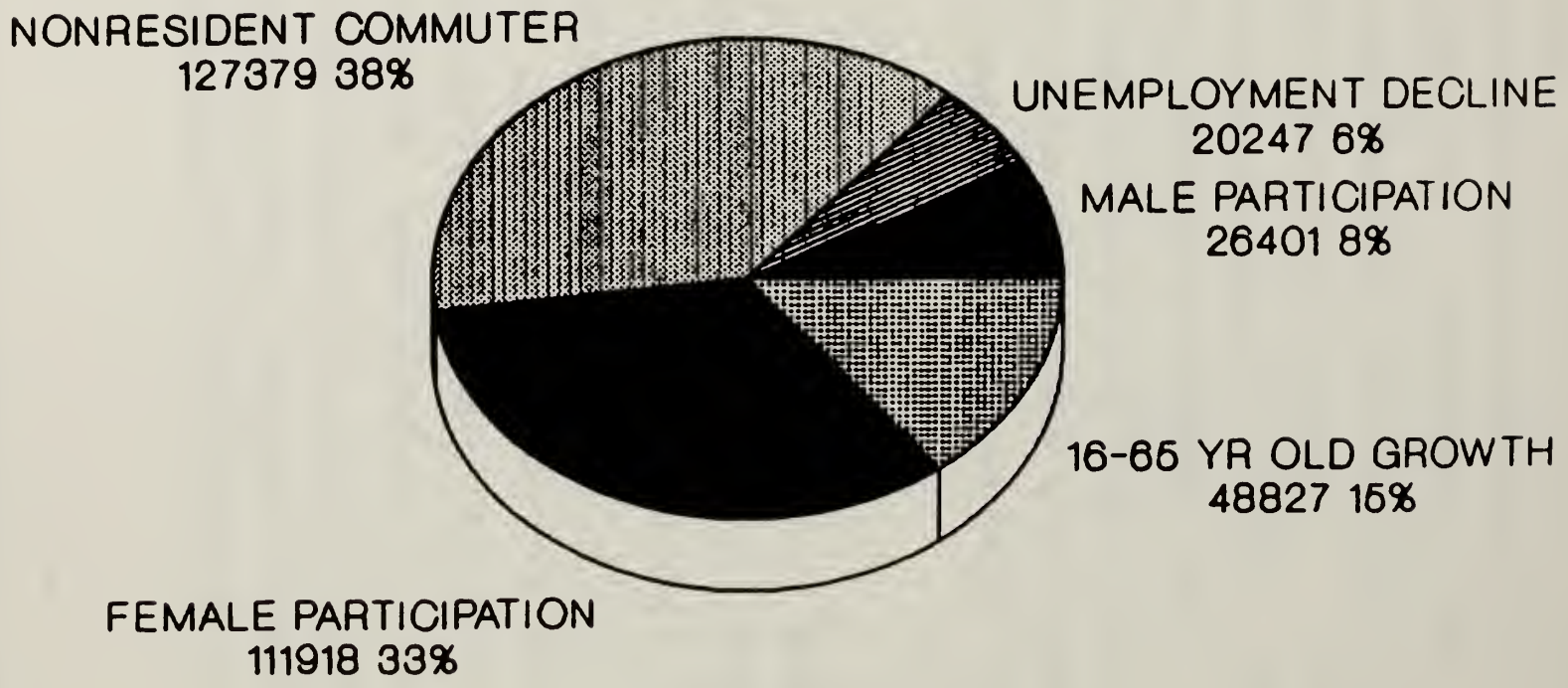
[8] James P. Allen and Eugene J. Turner. "Where to Find the New Immigrants." American Demographics. September 1988. pp. 22, 60.

FIGURE 17

SOURCES OF NEW WORKERS
MAPC REGION: 1987-2010



SOURCE: MAPC

1. INCREASING FEMALE LABOR FORCE PARTICIPATION

Further increases in the labor force participation (LFP) of married women are expected, especially those with preschool children. Female labor force participation will increase further, despite being higher than average, because of greater investment in education among the region's women and rapid growth in wages that will draw additional persons into the workforce. This forecast is predicated on sufficient child care and other social supports being provided to enable more women to enter the labor force.

LFP among women in the region is significantly higher than nationally, yet has increased at a rate comparable to that for the nation for some time. Female LFP was 60% in the region and 55% nationwide as of 1986 (see figure 18). We forecast female LFP in the region to increase eight percentage points to 68% by 2010.[9] These estimates are adapted from a national forecast by the federal Bureau of Labor Statistics (BLS).[10]

2. GROWTH IN NONRESIDENT COMMUTING

As sources of new indigenous labor have dried up, the number of nonresidents commuting into the region has grown rapidly, attracted by much higher wages.[11] Wages currently average 23% higher than in other metropolitan areas in Massachusetts, with the wage differential widening in recent years. Today, nonresident commuters hold 17% of all jobs. We

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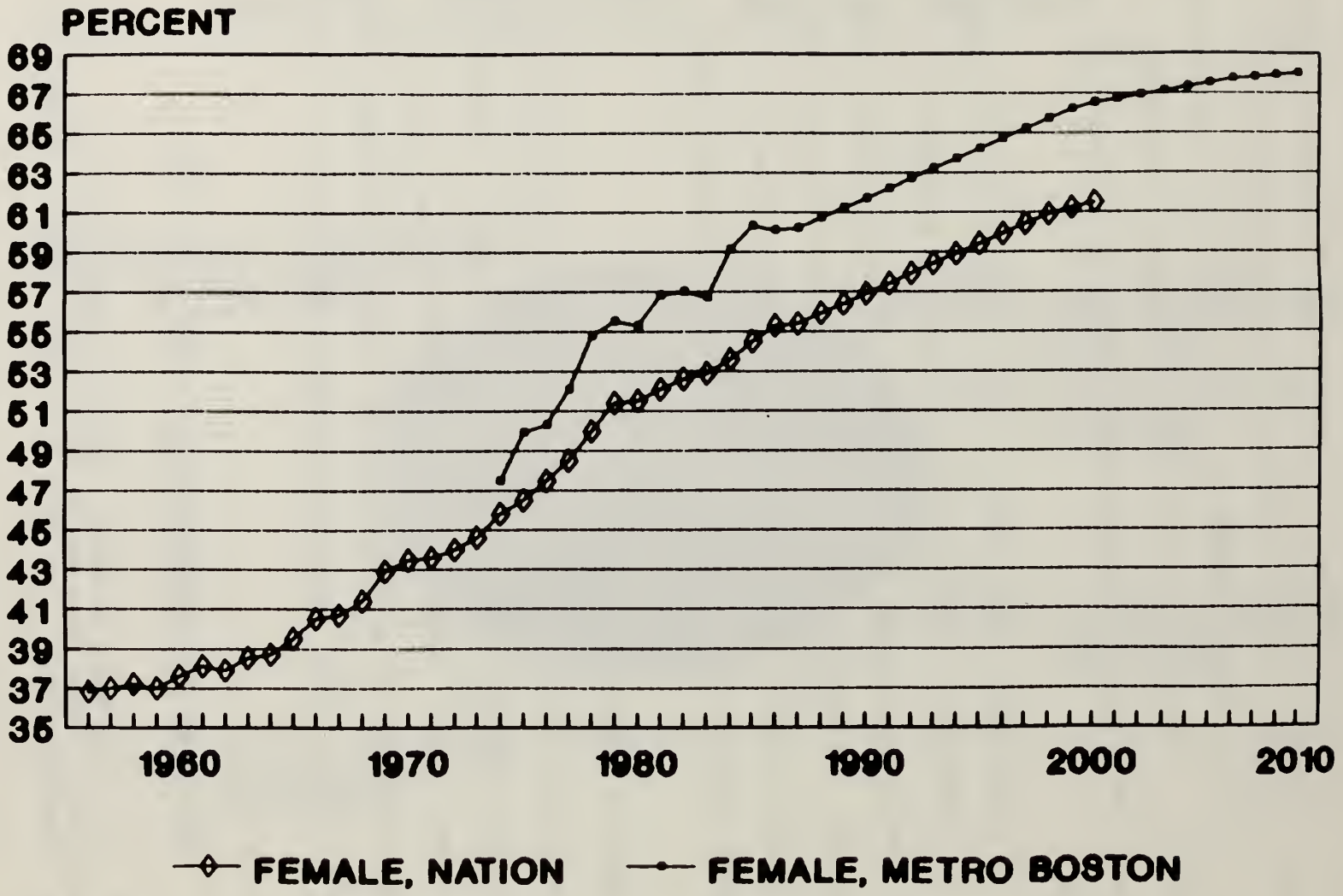
9 Employment and Income Forecasts. MAPC. June 1989.

10 U.S. Department of Labor. Bureau of Labor Statistics. Howard Fullerton, Jr. "Labor Force Projections: 1986 to 2000." Monthly Labor Review. September 1987, p. 19-29.

11 The number of nonresidents working in the region can be estimated by taking the number of workers in the community where the jobs are performed, and subtracting the number of workers in the community where they reside and the number of residents commuting to outside of the region. Population Age Group Forecast. MAPC. June 1989. p. 11-13.

FIGURE 18

FEMALE LABOR FORCE PARTICIPATION



SOURCE: U.S. BUREAU OF LABOR STATISTICS

expect their share of the labor supply will rise to 38% by 2010, providing 127,000 additional workers.[12] These forecasts assume that sufficient highway and transit capacities are developed to accommodate the additional workers and that the area's wage rates will prove a sufficient compensation for their long commutes. Many of these new nonresident workers will travel from as far away as southern New Hampshire, Rhode Island, Connecticut, central Massachusetts, and Cape Cod. We suspect that these nonresident commuters will tend to be young, earn relatively high incomes, and work in professional or technical positions.

3. OTHER SOURCES OF NEW LABOR

Less than 30% of the new labor supply will be drawn from these sources: a decline in unemployment, an increase in prime working-age adults, and gains in male and female labor force participation (see figure 17). We have forecast an unemployment rate of 2.7% in 2010, on the basis of a high demand for labor and effective employment training and literacy programs bringing persons into the labor force previously "unemployable": displaced older workers, minorities discriminated against, the physically handicapped, and the illiterate and semiliterate. A small, but expected increase in the number of prime working-age adults will add to the labor supply. Finally, independent of the influences mentioned previously, we expect a small increase in male participation in the labor force. This is primarily because the high-wage, labor scarce environment we anticipate will induce additional men into the labor force and retard the continuing trend toward early retirement.

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[12] This estimate was made by taking historical changes in the number of nonresident commuters and regressing them on the wage differential between metropolitan Boston and Massachusetts.

Several other sources often viewed as untapped labor resources have limited potential. First, labor force participation among those in the region 16 to 19 years old is 58.4%, already 4 percentage points higher than in the nation; their numbers are expected to drop over the next few decades. Also it may not be desirable public policy to encourage high workforce participation among high-school students. Second, among the Boston-area 65 and over population, 19% are working, 8 percentage points higher than in the nation. Elderly workforce participation has dropped for many decades with no sign of stabilization or reversal in trend. Third, the number of persons willing to work more than one job appears limited. Just 5% of the nation's workers hold two or more jobs, a proportion which has not increased in recent years.

VII. COMPARISON WITH OTHER FORECASTS

A. POPULATION

The following population forecasts have been published by federal, state and private sector organizations.

- The Massachusetts Institute for Social and Economic Research (MISER) of the University of Massachusetts at Amherst foresees a population of 2.87 million in the MAPC region by 1995, a decrease of four-tenths of one percent over 1980 (1).
- The federal Bureau of the Census projects an increase of 6.8% over 1980 in Massachusetts population by the year 2010 (2).
- The National Planning Association forecasts 3.88 million persons in the Boston-Lawrence-Salem-Lowell-Brockton Primary Metropolitan Statistical Areas by 1995, a 5.7% increase over 1980 (3).

- The Center for Housing Studies of Harvard University forecasts a metropolitan Boston population of 2.69 million by the year 2000, a decrease of 3% over 1980 (4).
- The Boston Edison Company projects an increase of 56,000 persons in its 46-community service area by the year 2010, a 3.8% increase over 1980 (5).

B. EMPLOYMENT

The following employment forecasts have been published by federal, state and private sector organizations.

- Woods and Poole Economics, Inc., foresees a 22% increase in Boston-Lawrence-Salem-Lowell-Brockton New England County Metropolitan Area (NEMCA) jobs between 1987 and 2010 (6).
- The National Planning Association projects 500,000 new jobs, an increase of 20% for the Boston-Lawrence-Salem-Lowell-Brockton NECMA between 1987 and 2010 (7).
- The Boston Edison Company foresees a gain of 493,000 jobs, an increase of 46%, for its 46-community service area between 1983 and 2000 (8).

VIII. COMMUNITY FORECAST METHODS

This section of the report describes the methods used to produce the community population and employment forecasts.

A. BASE YEAR

The 1985 State Census and 1986 Bureau of the Census Local Area Population Estimates were evaluated, along with recent residential

evelopment information, to create an initial population from which to make the community population forecasts. Massachusetts Division of Employment Security (DES) 1987 city and town statistics were used as a base year for the employment forecasts.

B. MAPC DATA SOURCES USED IN THE FORECASTS

1. Development File

MAPC's Development File contains residential, commercial and industrial projects which have been recently completed, are under construction, or are proposed. The Development File focuses on residential projects of 10 or more units and industrial and commercial projects that exceed 10,000 square feet of gross floor space. Some smaller projects are also included.

Each project in the file is identified by title, type of development, size, approval status, estimated occupation date, and location. The eventual development type, size and completion date were often estimated for projects still in preliminary stages.

Information for each project collected from community officials and developers was entered into DBASE III files to calculate the potential number of jobs and residents. Similar project listings were provided by the Boston Redevelopment Authority and the Cambridge Community Development Department.

2. Vacant Sites Survey

MAPC's inventory of vacant sites includes all commercially zoned parcels greater than 10,000 square feet and all industrially zoned sites greater than one acre. The inventory is based on the most

recent zoningmaps with each site described by zoning characteristics, neighboring land uses, size, available infrastructure, environmental characteristics, and ownership.

The Vacant Sites Survey was updated during 1986-87 by examining assessor records and windshield surveys of each site. Additionally, special attention was given to the development potential of each site. The Boston Redevelopment Authority and the Cambridge Community Development Department identified major undeveloped and underutilized parcels zoned for industrial and commercial use in their respective cities.

3. Land Use Study

Mapped and tabulated land use data from the MAPC Land Use Study were based on aerial photographs taken in 1985 by the MacConnell Group at the University of Massachusetts at Amherst. The urban categories include industrial, commercial, and three residential densities. Major undeveloped land uses include agriculture, open space, forest, and wetlands.

4. Community Interviews and Reviews

Local officials were interviewed about development projects, community attitudes and policies, zoning bylaws, environmental concerns, infrastructure capacities, moratoriums and other factors which could influence future population and employment growth.

In addition, the revised community development file and the updated forecasts were sent to local officials for their review and comment for accuracy and reasonableness.

C. OTHER DATA SOURCES USED IN THE FORECASTS

1. Housing Units Authorized by Building Permits and Public Contract

This annual report by the U.S. Bureau of the Census provided the number of new, privately-owned housing units authorized in each community (9). Housing is reported as contained in one, two, three or four, and five or more units per building/structure.

2. Projections of the Number of Households and Families: 1986 to 2000

This U.S. Bureau of the Census report projected average national household size for three scenarios to the year 2000. The middle series of presumed rates of growth was selected for our forecasts (10).

3. Average Household Size by Housing Type for New England

New residential development calculated by a recent Rutgers University study was translated into additional population using the average number of persons per unit for specific housing configurations built during 1975-1980 (11). The average sizes given for New England were: single family, 3.33; garden apartment, 1.77; and town house, 2.36.

4. New Jobs to Net Floor Space Ratios

The ratio of new jobs to net floor space in square feet (NFS) for different types of development provided an estimate of total new employment. One set of region-specific jobs to floor space ratios was available from the Boston Redevelopment Authority (BRA). The project sizes needed to generate one job in our forecasts are: 220 NFS for office; 400 NFS for retail; 500 NFS

for industrial and distribution; and 1.5 rooms for hotel (12).

D. SHORT-RANGE FORECAST METHODS

1. Population

Our short-range population forecasts incorporate both population increase from newly-constructed dwelling units and population reduction from existing dwelling units due to shrinking household size. Population growth from new unit development was estimated from the product of multiplying the number of new units in each housing category by the average number of persons per unit. Population reduction in existing housing units was a function of a projected decline in household size by the U.S. Bureau of the Census.

A baseline rate of new residential construction was derived from the rate of recent housing permit authorizations and from the size of major residential proposals. Adjustments were made to some development proposals based on their likely approval and market conditions. Occasionally, further adjustments were made to the preliminary development scenario based on community attitudes and policies towards development, infrastructure capabilities, and the availability of vacant and underutilized land.

Population in housing units existing in 1985 was assumed to parallel declines projected in household size. The U.S. Bureau of the Census forecast national household size to drop by 2.7 percent each half decade through the year 2000. A similar rate of decline was assumed for the metropolitan Boston area, with some reduction in the rate of decline in communities with a low average household size.

2. Employment

The projects listed in MAPC's Development File were the prime source for distributing employment increases for the 1990 forecasts. Potential jobs generated in the new industrial and commercial space were calculated using net floor space (NFS) to employment ratios for each development type derived by the Boston Redevelopment Authority. NFS was estimated at 79% of gross, the reduction being for "nonproductive" and unoccupied floor area. The new employment data was added to existing employment to obtain preliminary forecasts.

The projects in the development file run the gamut from those already occupied to those still in the dream stage. If all of the projects with tentative occupancy dates by the end of 1990 were realized, approximately 40 million square feet of gross space would be added to the region, excluding the cities of Boston and Cambridge. Absorption of this much space in so little time is unlikely. Therefore, the employment forecasts associated with some projects were delayed, reduced, or eliminated if development approval or favorable market conditions appeared in question.

The preliminary forecasts were further adjusted to reflect employment expansion in both existing businesses and the regional context. A number of additional factors were evaluated including: recent employment trends; accessibility to major highways; expansion capacity of sewer and water facilities; the expansion prospects of the community's major employment sectors; proximity to growing communities; the existence of development moratoriums, restrictive zoning, growth control policies and other political factors which

could limit future development; and areas undergoing revitalization, such as downtown centers and commercial strips, as identified by community officials.

E. LONG-RANGE FORECAST METHODS

As developments are as yet unspecified or proposed for years far into the future, our long-range forecasts rely upon more subjective growth indicators. Factors which indicate a community's desirability and disposition towards future growth were assessed in detail. From these growth indicators, communities, and then traffic zones within communities, were ranked according to their likelihood to sustain long-term growth. The growth forecast was a judgment of whether the area had the attributes to grow faster, slower, or at the same rate as the regional average.

1. Population

As with short-range population forecasts, traffic-zone population levels are influenced by both residential construction and declining household size. Accordingly, our long-range forecasts balance these two factors in the same manner described for the short-range population forecasts. The federal Census Bureau's projected rate of household size decline was extrapolated to 2010 at a slightly reduced rate.

The resulting population forecasts were thoroughly reviewed and adjusted to assure consistency between similar groups of communities. Some of the preliminary scenarios developed were modified based on the following factors:

- o Specific residential development proposals expected to be completed during the 1990s.
- o Extrapolation of the recent pace of housing permit authorizations and major residential developments.
- o In a few of the more urbanized areas, expectation that a substantial number of commercial buildings would be converted into housing.
- o Adequacy of infrastructure, particularly water and sewer facilities to support new dwelling units.
- o Proximity to rapidly expanding employment centers; nearby communities were expected to feel pressure for new residential development.
- o Pro-growth community attitudes determined by the priority placed on creating new housing units for low-income residents, the elderly and others.
- o Anti-growth community attitudes discouraging new housing construction because of its impacts on water and sewer facilities, open space, and traffic congestion.

2. Employment

Post-1990 employment forecasts were based on more subjective considerations of growth potential rather than on specific development proposals. Relatively few development plans extend past 1990, and even fewer of these have tenants committed. Emphasis was placed on a community's ability to absorb and/or compete for a limited number of new jobs.

Generally, a community needed an abundance of vacant and underutilized areas suitable for development to support long term growth. Growth rates established for each community and traffic zone were based on the following factors.

- o Historical employment trends and recent development activity, a general barometer of a community's ability to maintain and create jobs.
- o Employment composition, such as an exceptionally large proportion of "high technology" employers, or mature or declining industries.
- o Direct access to major highways, considered particularly important for a community to be able to accommodate commuters and support growth.
- o Adequacy of infrastructure, particularly water and sewer facilities, for supporting new businesses.
- o Attractive, underutilized areas identified by community officials, which could be more intensely developed.
- o Vacant commercial- and industrial-zoned land which could support future development. MAPC's Vacant Sites Survey identified sites possessing good development potential. Many sites had development barriers, including poor access, environmentally sensitive features and incompatibility with neighboring land uses. Sites were given priority if they had direct access to a major highway or had additional capacity available in appropriate water and sewer facilities.

- Positive attitude and policies towards new economic development, such as active development or redevelopment programs or a heightened interest in new industrial and commercial development in the aftermath of Proposition 2 1/2 because of a diminished tax base.
- Negative attitudes and policies towards new developments such as the passage of zoning policies and legislation that slow or limit growth.

APPENDIX 1

DIFFERENCES IN EXPECTED GROWTH BETWEEN THE COMMUNITY AND MAPC

MAPC community population and employment forecasts are presented in the two appendices which follow. An asterisk (*) in front of the community name means a local official felt that expected community growth would differ significantly from the MAPC forecasts. Community comments on these forecasts were solicited as part of the forecast review process.

Most of the community comments focused on a population discrepancy between the local census and estimates by the federal Bureau of the Census. MAPC's forecasts use recent federal estimates because their consistent method of production enables comparability between communities. We do not have a reliable means by which to evaluate the accuracy of each local census. In some cases these local censuses are very accurate; in others they can be poor.

Aside from the inconsistency of effort in maintaining local censuses, who gets counted as a "legal resident" is also a cause of significant disparity between local and federal population statistics. "Snowbirds", who spend a significant amount of the year in a warmer climate but still maintain a home here; college students, attending school in another community most of the year; and military personnel, stationed in a community away from the one they consider home, may be counted in either location depending on whose residency definition is followed.

A few community officials felt that expected growth would be higher than the MAPC forecasts based on new or proposed developments. In most communities, the additional population in newly constructed housing continues to be offset by population losses in existing housing units. This decline in household size is long established and expected to continue by the federal Bureau of the Census. Of lesser importance in any discrepancy between population or employment statistics is that proposed or completed developments are not necessarily occupied.

APPENDIX 1

POPULATION FORECASTS FOR CITIES AND TOWNS IN METROPOLITAN BOSTON
PRODUCED BY THE METROPOLITAN AREA PLANNING COUNCIL

COMMUNITY	1980**	1985***	1986****	1990	1995	2000	2005	2010	PERCENT CHANGE 1986-1990	PERCENT CHANGE 1986-2010
ACTON	17,544	17,431	17,350	18,180	18,480	18,800	19,160	19,350	4.8	11.5
ARLINGTON	48,219	46,893	44,350	45,000	45,210	44,920	44,830	44,740	1.5	0.9
ASHLAND	9,165	10,531	10,870	11,000	12,000	12,500	13,000	13,500	1.2	24.2
BEDFORD	13,067	13,100	12,490	13,020	13,040	13,040	13,040	13,040	4.2	4.4
BELLINGHAM	14,300	13,677	14,230	14,300	15,000	16,000	17,000	18,500	0.5	30.0
BELMONT	26,100	26,100	25,020	25,800	25,800	25,800	25,800	25,800	3.1	3.1
BEVERLY	37,655	37,700	36,980	37,850	38,000	38,000	38,000	38,000	2.4	2.8
BOLTON	2,530	2,958	2,940	3,100	3,350	3,550	3,600	3,800	5.4	29.3
BOSTON	562,994	570,900	573,600	572,000	573,500	574,000	576,000	578,000	-0.3	0.8
* BOXBOROUGH	3,126	3,170	3,060	3,200	3,400	3,550	3,700	3,900	4.6	27.5
BRAINTREE	36,337	36,400	34,690	35,400	36,000	36,200	36,400	36,900	2.0	6.4
BROOKLINE	55,062	55,800	52,360	54,700	54,800	54,970	55,070	55,200	4.5	5.4
* BURLINGTON	23,486	23,500	22,750	23,100	22,800	22,610	22,420	22,230	1.5	-2.3
CAMBRIDGE	95,322	92,701	91,260	91,800	91,465	90,925	90,400	90,200	0.6	-1.2
CANTON	18,182	18,200	18,340	18,200	18,200	18,200	18,200	18,200	-0.8	-0.8
CARLISLE	3,306	3,862	4,060	4,010	4,270	4,430	4,590	4,750	-1.2	17.0
CHELSEA	25,431	26,140	25,640	25,500	25,535	25,575	25,600	25,300	-0.5	-1.3
COHASSET	7,174	7,200	7,290	7,250	7,250	7,250	7,250	7,250	-0.5	-0.5
CONCORD	16,293	16,300	16,470	16,500	16,500	16,500	16,500	16,500	0.2	0.2
DANVERS	24,100	24,100	24,150	24,410	24,390	24,150	23,910	23,690	1.1	-1.9
DEDHAM	25,298	24,300	23,810	24,300	24,300	24,300	24,300	24,300	2.1	2.1
DOVER	4,703	4,700	4,830	4,700	4,700	4,700	4,700	4,700	-2.7	-2.7
* DUXBURY	11,807	13,100	13,820	13,500	13,800	13,900	14,100	14,300	-2.3	3.5
ESSEX	2,998	2,971	2,960	3,060	3,130	3,150	3,180	3,200	3.4	8.1
EVERETT	37,195	36,100	36,330	35,990	35,650	35,300	34,600	33,900	-0.9	-6.7
FOXBOROUGH	14,148	14,522	14,550	14,540	14,550	14,550	14,600	14,700	-0.1	1.0
FRAMINGHAM	65,113	65,100	63,890	64,900	64,700	64,700	64,700	64,700	1.6	1.3
FRANKLIN	18,217	17,865	19,620	20,000	22,720	24,910	26,130	27,030	1.9	37.8
GLOUCESTER	27,768	27,800	28,230	28,010	28,140	28,120	28,110	28,100	-0.8	-0.5
HAMILTON	6,960	7,103	7,140	7,300	7,450	7,520	7,560	7,650	2.2	7.1
HANOVER	11,358	12,100	11,560	12,500	12,800	13,000	13,200	13,200	8.1	14.2
* HINGHAM	20,339	21,176	19,670	21,500	21,800	22,000	22,150	22,300	9.3	13.4
HOLBROOK	11,140	11,100	10,880	10,880	10,880	10,880	10,880	10,880	0.0	0.0
HOLLISTON	12,622	12,606	12,980	13,650	13,900	13,930	13,970	14,000	5.2	7.9
HOPKINTON	7,114	7,711	8,460	8,500	9,000	9,130	9,220	9,400	0.5	11.1
HUDSON	16,408	17,251	17,550	17,800	18,100	18,150	18,200	18,250	1.4	4.0
HULL	9,714	9,700	9,630	10,000	10,150	10,300	10,350	10,400	3.8	8.0
* IPSWICH	11,158	11,368	11,750	11,900	12,300	12,500	12,700	13,000	1.3	10.6
LEXINGTON	29,479	29,500	28,610	29,500	29,500	29,500	29,500	29,500	3.1	3.1
LINCOLN	7,098	7,100	7,710	7,300	7,450	7,500	7,500	7,500	-5.3	-2.7
LITTLETON	6,970	6,984	7,170	7,050	7,250	7,400	7,500	7,700	-1.7	7.4
LYNN	78,471	80,200	78,560	79,700	79,060	77,730	76,430	75,170	1.5	-4.3
LYNNFIELD	11,267	11,300	11,350	11,170	11,050	10,890	10,730	10,570	-1.6	-6.9
MALDEN	53,386	53,300	53,490	54,250	53,900	53,340	52,820	52,300	1.4	-2.2
MANCHESTER	5,424	5,472	5,260	5,480	5,480	5,470	5,450	5,440	4.2	3.4
MARBLEHEAD	20,126	20,199	19,580	19,970	19,710	19,360	19,010	18,680	2.0	-4.6
MARLBOROUGH	30,617	32,100	31,180	33,500	34,000	34,500	35,030	35,250	7.4	13.1
* MARSHFIELD	20,916	22,295	22,180	22,800	23,400	23,800	24,000	24,400	2.8	10.0
MAYNARD	9,590	9,708	9,900	10,000	10,050	10,150	10,150	10,150	1.0	2.5
MEDFIELD	10,220	11,000	10,610	11,200	11,400	11,500	11,700	11,800	5.6	11.2
MEDFORD	58,076	57,200	56,830	56,400	56,000	55,600	55,500	55,400	-0.8	-2.5
MEDWAY	8,447	9,037	9,360	9,570	10,000	10,270	10,540	10,810	2.2	15.5
MELROSE	30,055	29,228	28,790	28,650	28,260	27,710	27,190	26,670	-0.5	-7.4

POPULATION FORECASTS FOR CITIES AND TOWNS IN METROPOLITAN BOSTON
PROBUCED BY THE METROPOLITAN AREA PLANNING COUNCIL

	COMMUNITY	1980**	1985***	1986****	1990	1995	2000	2005	2010	PERCENT CHANGE 1986-1990	PERCENT CHANGE 1986-2010
	MIDDLETON	4,135	4,500	4,710	4,800	5,000	5,200	5,500	5,700	1.9	21.0
	MILFORD	23,390	24,038	24,230	24,510	24,740	24,650	24,560	24,480	1.2	1.0
*	MILLIS	6,908	6,689	7,250	7,010	7,410	7,680	7,960	8,230	-3.3	13.5
	MILTON	25,860	25,900	25,500	25,800	25,750	25,750	25,750	25,750	1.2	1.0
	NAHANT	3,947	4,070	3,940	3,940	3,910	3,880	3,850	3,790	0.0	-3.8
	NATICK	29,461	30,679	30,270	31,000	31,500	31,800	32,000	32,000	2.4	5.7
*	NEEDHAM	27,901	27,900	27,240	27,900	27,900	27,900	27,900	27,900	2.4	2.4
	NEWTON	83,622	82,900	82,140	81,900	81,300	80,700	80,500	80,400	-0.3	-2.1
	NORFOLK	6,363	8,210	7,930	8,350	8,470	8,550	8,630	8,700	5.3	9.7
*	NO. READING	11,455	11,897	11,880	12,100	12,300	12,350	12,450	12,550	1.9	5.6
*	NORWELL	9,182	10,100	9,240	10,100	10,200	10,350	10,350	10,350	9.3	12.0
	NORWOOD	29,711	29,700	28,220	29,700	29,700	29,700	29,700	29,700	5.2	5.2
*	PEABODY	45,976	44,400	46,300	44,900	44,900	44,430	43,990	43,550	-3.0	-5.9
	PEMBROKE	13,487	14,935	14,540	15,100	15,300	15,450	15,600	15,800	3.9	8.7
	QUINCY	84,743	88,000	82,630	86,500	87,620	88,050	91,000	92,500	4.7	11.9
	RANDOLPH	28,218	28,400	28,580	28,600	28,600	28,600	28,600	28,600	0.1	0.1
	READING	22,678	22,700	22,550	22,980	22,960	22,740	22,530	22,330	1.9	-1.0
	REVERE	42,423	42,000	43,510	43,800	44,200	44,800	45,480	46,000	0.7	5.7
	ROCKLAND	15,695	15,700	15,340	15,700	15,700	15,700	15,700	15,700	2.3	2.3
	ROCKPORT	6,345	6,300	6,690	6,420	6,400	6,400	6,390	6,390	-4.0	-4.5
*	SALEM	38,220	38,163	38,050	39,000	39,500	39,760	40,000	41,250	2.5	8.4
	SAUGUS	24,746	24,700	25,860	25,150	25,200	24,950	24,710	24,480	-2.7	-5.3
	SCITUATE	17,317	17,300	16,960	17,200	17,200	17,200	17,200	17,200	1.4	1.4
*	SHARON	13,601	14,859	14,660	14,800	15,000	15,300	15,800	15,800	1.0	7.8
	SHERBORN	4,049	4,400	4,260	4,500	4,600	4,700	4,800	5,000	5.6	17.4
	SOMERVILLE	77,372	75,000	72,280	72,500	72,800	72,800	72,800	72,800	0.3	0.7
	SOUTHBOROUGH	6,193	6,400	6,420	6,600	6,800	7,000	7,300	7,500	2.8	16.8
	STONEHAM	21,424	21,102	22,550	22,000	22,200	22,200	22,200	22,200	-2.4	-1.6
	STOUGHTON	26,710	27,500	27,190	28,200	28,400	29,000	29,300	29,500	3.7	8.5
	STOW	5,144	5,308	5,470	5,550	5,750	6,000	6,150	6,250	1.5	14.3
*	SUDBURY	14,027	14,000	14,140	14,000	14,000	14,000	14,000	14,000	-1.0	-1.0
	SWAMPSCOTT	13,837	13,524	13,330	13,610	13,690	13,690	13,700	13,700	2.1	2.8
	TOPSFIELD	5,709	5,700	5,550	5,850	5,910	5,970	6,020	6,100	5.4	9.9
	WAKEFIELD	24,895	24,900	25,170	24,510	24,260	23,940	23,620	23,300	-2.6	-7.4
	WALPOLE	18,859	19,910	19,720	20,500	21,000	21,530	21,620	21,700	4.0	10.0
	WALTHAM	58,200	58,200	57,090	58,200	58,200	58,200	58,200	58,200	1.9	1.9
	WATERTOWN	34,384	33,438	32,890	32,450	32,240	32,030	31,970	31,900	-1.3	-3.0
	WAYLAND	12,170	12,200	12,190	12,200	12,200	12,200	12,200	12,200	0.1	0.1
	WELLESLEY	27,209	27,200	26,550	27,200	27,200	27,200	27,200	27,200	2.4	2.4
	WENHAM	3,897	3,838	3,810	3,870	4,100	4,150	4,200	4,250	1.6	11.5
	WESTON	11,169	10,800	10,700	10,800	10,800	10,800	10,800	10,800	0.9	0.9
	WESTWOOD	13,212	13,200	12,580	13,200	13,200	13,200	13,200	13,200	4.9	4.9
	WEYMOUTH	55,601	56,900	54,480	56,900	56,900	56,900	56,900	56,900	4.4	4.4
	WILMINGTON	17,471	17,704	17,530	17,900	18,400	18,700	18,800	18,900	2.1	7.8
	WINCHESTER	20,701	20,763	20,120	20,720	20,670	20,520	20,380	20,230	3.0	0.5
	WINTHROP	19,294	18,700	18,640	18,380	18,160	17,940	17,770	17,600	-1.4	-5.6
	WOBURN	36,626	36,600	37,380	37,510	37,770	37,390	37,020	36,650	0.3	-2.0
	WRENTHAM	7,580	8,500	8,590	8,700	8,950	9,200	9,510	9,800	1.3	14.1
	REGION	2,884,712	2,907,686	2,882,990	2,917,000	2,932,530	2,937,880	2,945,980	2,953,230	1.2	2.4

** U.S. CENSUS OF POPULATION

*** STATE CENSUS, OFFICE OF THE SECRETARY OF STATE

**** U.S. CENSUS ESTIMATES, P26 SERIES, CURRENT POPULATION REPORTS

APPENDIX 2

EMPLOYMENT FORECASTS FOR CITIES AND TOWNS IN METROPOLITAN BOSTON
PRODUCED BY THE METROPOLITAN AREA PLANNING COUNCIL

COMMUNITY	1980	1985	1986	1987	1990	1995	2000	2005	2010	PERCENT CHANGE 1986-1990	PERCENT CHANGE 1986-2010
ACTON	13,500	8,304	8,625	9,721	12,780	13,600	13,870	13,980	14,100	48.2	63.5
ARLINGTON	7,668	8,577	8,826	9,109	9,400	9,680	9,880	9,990	10,100	6.5	14.4
ASHLAND	3,564	3,682	4,035	4,353	4,710	5,000	5,100	5,200	5,300	16.7	31.4
BEDFORD	19,597	23,706	25,733	26,268	27,290	27,600	27,990	28,520	28,650	6.1	11.3
BELLINGHAM	1,898	2,286	2,453	2,712	3,550	4,850	5,230	5,460	5,600	44.7	128.3
BELMONT	6,556	6,681	6,924	7,360	7,500	7,550	7,600	7,650	7,700	8.3	11.2
BEVERLY	12,675	13,848	15,278	15,031	15,440	15,740	16,140	16,440	16,540	1.1	8.3
BOLTON	1,022	1,239	1,081	1,136	1,500	1,600	1,630	1,660	1,700	38.8	57.3
BOSTON	505,360	532,729	544,740	559,954	587,535	606,220	614,130	619,305	620,780	7.9	14.0
* BOXBOROUGH	558	645	1,485	1,889	2,450	3,300	3,600	3,800	4,100	65.0	176.1
BRAINTREE	23,141	28,483	29,972	31,334	35,300	36,250	37,500	39,200	39,400	17.8	31.5
BROOKLINE	17,112	18,157	18,477	18,467	18,800	18,850	18,900	18,950	18,970	1.7	2.7
BURLINGTON	26,904	37,279	35,051	35,177	40,800	41,800	42,600	43,130	43,500	16.4	24.1
CAMBRIDGE	92,044	94,848	97,073	98,686	105,800	107,200	110,150	112,050	112,600	9.0	16.0
CANTON	13,705	15,013	16,465	19,526	19,800	20,950	21,400	21,600	21,800	20.3	32.4
CARLISLE	405	602	644	693	690	700	710	720	730	7.1	13.4
CHELSEA	9,667	9,210	9,152	9,459	10,220	10,820	11,140	11,280	11,395	11.7	24.5
COHASSET	1,891	2,155	2,171	2,120	2,275	2,350	2,410	2,460	2,480	4.8	14.2
CONCORD	9,827	11,983	11,628	11,650	13,100	13,300	13,400	13,490	13,600	12.7	17.0
DANVERS	15,726	19,018	19,420	20,543	23,560	24,360	24,660	24,760	24,810	21.3	27.8
DEDHAM	12,184	13,016	14,010	14,288	14,530	15,030	15,330	15,530	15,630	3.7	11.6
DOVER	653	617	670	704	700	730	740	750	760	4.5	13.4
DUXBURY	1,453	2,026	2,211	2,308	2,300	2,380	2,420	2,470	2,500	4.0	13.1
ESSEX	746	904	977	1,015	1,020	1,040	1,050	1,055	1,060	4.4	8.5
EVERETT	13,163	13,860	14,046	13,754	14,060	14,390	14,640	14,890	15,100	0.1	7.5
FOXBOROUGH	8,311	8,809	8,090	7,903	9,500	10,100	10,530	10,870	11,000	17.4	36.0
FRAMINGHAM	40,136	49,032	48,844	48,687	53,700	55,650	57,700	59,120	60,320	9.9	23.5
FRANKLIN	3,960	4,398	4,769	5,334	6,300	7,600	8,080	8,470	8,500	32.1	78.2
GLOUCESTER	12,305	12,270	12,087	12,415	13,130	13,780	13,900	14,050	14,190	8.6	17.4
HAMILTON	1,168	1,693	1,618	1,504	1,820	1,900	1,940	1,960	1,980	12.5	22.4
HANOVER	5,657	6,068	6,550	6,981	7,080	7,400	7,600	7,650	7,700	8.1	17.6
HINGHAM	7,482	9,922	10,753	10,754	11,520	12,320	13,020	13,500	13,815	7.1	28.5
HOLBROOK	2,534	2,332	2,479	2,838	2,630	2,700	2,730	2,750	2,800	6.1	12.9
HOLLISTON	2,888	3,726	3,951	4,109	4,350	4,600	4,750	4,900	5,000	10.1	26.6
HOPKINTON	1,885	2,703	3,182	3,632	3,800	4,150	4,380	4,470	4,600	19.4	44.6
HUDSON	5,224	6,792	7,238	7,982	8,400	8,600	8,700	8,800	8,900	16.1	23.0
HULL	1,398	1,174	1,133	1,197	1,290	1,330	1,350	1,360	1,370	13.9	20.9
IPSWICH	2,256	2,287	2,717	2,810	2,980	3,150	3,240	3,290	3,330	9.7	22.6
LEXINGTON	17,295	18,846	18,457	18,197	20,730	21,530	21,900	22,330	22,615	12.3	22.5
LINCOLN	1,374	1,352	1,462	1,644	1,850	1,950	2,000	2,050	2,100	26.5	43.6
LITTLETON	2,837	3,412	3,347	5,085	5,300	6,025	6,350	6,600	6,900	58.4	106.2
LYNN	37,070	35,118	34,998	34,923	35,200	35,700	36,150	36,550	36,610	0.6	4.6
LYNNFIELD	2,918	2,753	2,842	3,091	3,190	3,250	3,300	3,340	3,370	12.2	18.6
MALDEN	18,314	18,688	20,001	21,316	24,010	24,670	25,030	25,090	25,100	20.0	25.5
MANCHESTER	1,041	1,166	1,331	1,393	1,400	1,430	1,460	1,480	1,490	5.2	11.9
MARBLEHEAD	4,345	4,765	4,816	4,834	4,850	4,870	4,880	4,890	4,900	0.7	1.7
MARLBOROUGH	13,483	12,907	14,506	17,695	23,700	25,800	28,375	30,175	30,400	63.4	109.6
MARSHFIELD	2,937	3,889	3,349	4,343	4,500	4,700	4,850	5,000	5,150	34.4	53.8
MAYNARD **	15,926	15,187	14,922	7,758	7,850	8,050	8,300	8,500	8,650	-47.4	-42.0
MEDFIELD	3,332	3,578	3,537	3,494	3,970	4,050	4,120	4,200	4,270	12.2	20.7
MEDFORD	15,176	17,249	18,392	18,466	20,600	22,250	22,975	23,675	23,850	12.0	29.7
MEDWAY	1,466	2,037	2,065	2,184	2,300	2,450	2,570	2,680	2,800	11.4	35.6
MELROSE	5,964	6,038	6,123	6,103	6,640	6,800	6,900	7,025	7,100	8.4	16.0
MIDDLETON	1,725	2,674	2,139	2,135	2,600	2,880	3,000	3,100	3,200	21.6	49.6

EMPLOYMENT FORECASTS FOR CITIES AND TOWNS IN METROPOLITAN BOSTON
PRODUCED BY THE METROPOLITAN AREA PLANNING COUNCIL

COMMUNITY	1980	1985	1986	1987	1990	1995	2000	2005	2010	PERCENT CHANGE 1986-1990	PERCENT CHANGE 1986-2010
MILFORD	7,186	10,287	10,392	11,423	12,150	13,650	13,960	14,150	14,330	16.9	37.9
MILLIS	1,595	1,868	1,798	1,838	2,050	2,150	2,180	2,210	2,250	14.0	25.1
MILTON	4,904	5,155	5,393	5,281	5,390	5,560	5,755	5,935	6,120	-0.1	13.5
NAHANT	506	467	520	597	530	540	540	550	550	1.9	5.8
NATICK	15,562	17,809	18,429	19,763	21,850	22,100	22,250	22,350	22,400	18.6	21.5
NEEDHAM	14,755	19,670	18,040	19,514	21,840	22,290	22,740	23,190	23,340	21.1	29.4
NEWTON	41,175	49,647	48,439	47,555	53,970	55,770	56,930	57,320	57,420	11.4	18.5
NORFOLK	1,092	2,042	2,142	2,328	2,350	2,450	2,550	2,600	2,650	9.7	23.7
NORTH READING	2,598	3,043	3,791	3,798	4,270	4,620	4,850	4,970	5,070	12.6	33.7
NORWELL	2,196	3,782	3,791	4,821	4,600	4,800	4,930	5,170	5,200	21.3	37.2
NORWOOD	22,654	21,617	23,192	23,754	26,000	26,600	26,900	27,200	27,465	12.1	18.4
PEABODY	15,491	17,594	20,661	20,911	24,350	26,050	26,400	26,575	26,750	17.9	29.5
PEMBROKE	1,301	2,740	3,239	3,528	3,850	3,980	4,100	4,150	4,250	18.9	31.2
QUINCY	34,109	40,631	40,250	41,399	44,500	46,400	47,375	47,850	48,150	10.6	19.6
RANDOLPH	7,851	9,712	10,105	10,219	10,300	10,620	11,070	11,320	11,570	1.9	14.5
READING	4,830	5,614	5,719	6,346	6,300	6,450	6,520	6,590	6,690	10.2	17.0
REVERE	7,644	7,166	7,930	8,343	8,510	8,650	8,780	8,950	9,040	7.3	14.0
ROCKLAND	5,006	6,007	6,397	6,822	6,900	7,270	7,870	8,370	8,770	7.9	37.1
ROCKPORT	1,470	1,382	1,376	1,397	1,450	1,490	1,520	1,550	1,590	5.4	15.6
SALEM	20,262	19,636	19,776	20,468	20,600	21,000	21,200	21,350	21,450	4.2	8.5
SAUGUS	8,121	9,390	9,725	10,109	10,700	11,100	11,500	11,750	11,900	10.0	22.4
SCITUATE	2,767	3,140	3,235	3,323	3,350	3,390	3,490	3,570	3,670	3.6	13.4
SHARON	2,417	3,086	3,231	3,203	3,290	3,340	3,420	3,490	3,590	1.8	11.1
SHERBORN	330	450	486	508	510	520	530	535	540	4.9	11.1
SOMERVILLE	17,949	20,287	19,998	20,283	21,990	22,950	23,230	23,360	23,460	10.0	17.3
SOUTHBOROUGH	3,439	3,269	3,653	3,590	4,100	4,550	4,700	4,800	4,900	12.2	34.1
STONEHAM	6,647	6,941	7,164	7,653	7,750	7,850	7,925	8,000	8,050	8.2	12.4
STOUGHTON	8,135	10,614	11,036	12,014	12,310	13,840	14,040	14,260	14,310	11.5	29.7
STOW	805	1,178	1,241	2,269	2,200	2,280	2,300	2,330	2,350	77.3	89.4
SUDBURY	7,186	8,984	9,556	9,789	10,500	10,980	11,350	11,730	12,000	9.9	25.6
SWAMPSCOTT	2,777	2,975	3,015	2,746	3,020	3,090	3,110	3,120	3,140	0.2	4.1
TOPSFIELD	1,246	1,580	1,733	1,768	1,750	1,800	1,830	1,870	1,900	1.0	9.6
WAKEFIELD	10,885	12,705	11,298	12,090	13,940	15,120	15,390	15,560	15,630	23.4	38.3
* WALPOLE	8,182	7,853	8,167	7,782	8,660	9,320	9,760	10,260	10,460	6.0	28.1
WALTHAM	60,857	60,483	59,796	61,008	68,600	69,700	70,200	70,630	70,720	14.7	18.3
WATERTOWN	16,763	19,230	19,167	18,993	20,010	20,590	20,960	21,240	21,410	4.4	11.7
WAYLAND	2,948	3,066	3,030	3,281	3,250	3,320	3,400	3,470	3,550	7.3	17.2
WELLESLEY	16,117	17,868	17,609	18,216	18,370	18,690	19,200	19,620	19,940	4.3	13.2
WENHAM	498	524	589	583	590	600	610	630	640	0.2	8.7
WESTON	3,147	3,809	3,723	3,602	3,900	4,410	4,710	4,950	5,180	4.8	39.1
WESTWOOD	5,060	8,846	8,792	9,131	9,490	9,860	10,140	10,510	10,790	7.9	22.7
WEYMOUTH	13,006	15,050	15,482	14,249	15,940	16,870	17,790	18,430	18,690	3.0	20.7
WILMINGTON	15,279	23,396	23,287	23,241	25,100	26,500	27,670	28,680	29,850	7.8	28.2
WINCHESTER	5,394	6,236	6,561	7,218	6,700	6,790	6,860	6,930	7,000	2.1	6.7
WINTHROP	2,656	2,878	3,013	2,985	3,020	3,040	3,060	3,070	3,080	0.2	2.2
WOBURN	24,126	34,245	35,349	36,723	38,020	39,000	41,000	42,000	42,500	7.6	20.2
WRENTHAM	4,156	4,289	4,344	4,501	5,100	5,900	6,400	6,980	7,280	17.4	67.6
MAPC REGION	1,514,506	1,667,974	1,702,505	1,747,027	1,874,220	1,942,815	1,985,295	2,016,340	2,032,500	10.1	19.4

* Maynard's forecast reflects changes in the town's non-time-series employment count by the Massachusetts Department of Employment and Training (DET).

Note that MAPC forecasts are based on DET employment coverage which is equivalent to approximately 98.5% of the federal Bureau of Labor Statistics employment coverage.

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